The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 756.---Vol. XX.] LONDON, SATURDAY, FEBRUARY 16, 1850. [Price 6d.

TO CONTRACTORS, ENGINE-WRIGHTS, IRON MANUFACTURERS, COLLIERY OWNERS, WAGGON BUILDERS, AGRICULTURISTS, HORSE DEALERS, HOUSE BUILDERS, BLACKSMITHS, MILLWRIGHTS, QUARRYMEN, &c. &c.

MR. GEORGE HARDCASTLE announces that he has been instructed by Messrs. JOHN CRAVEN and SONS, who have completed their contract at the SUNDERLAND DOCK, to SELL, BY PUBLIC AUCTION, on the Premises, on Monday, Tuesday, and Wednesday, the 18th, 19th, and 20th of February, instant, the following most valuable

WORKING STOCK: viz.—

IRON, &c.—500 tons malleable flat-bottomed rails, points, and crossings, new waggon wheels, screw bolts and nuts, scrap iron, square and round new iron, chain of various sizes, dogs, and fire-grates.

ENGINES—locomotive and tender; prize travelling 10-horse engine for common roads, and used in general farming operations; 1 6-horse, 2 8-horse, and 1 12-horse, with malleable chimney, drum, and gearing for drawing, each constructed so as to be perfected portable entire.

MACHINES, &c.—powerful travelling cranes, waggon-mounted cranes from 2 to 4 ton power, screwing machine with taps and dies, lathe with slide rest, large incline sheaves with breaks and gearing, large and small metal incline drums, new wrought-iron engine chimney, new boiler 30 feet by 4½ feet, set of 10-inch double-headed pumps, several 6-inch hand pumps, wood and iron turn tables, horse machine, wood and iron blocks, saw mill frame and saws, weighing machine, patent scales and weights, screw jacks, hydraulic press, punching machine, straightening machine for railway plates, and screw pump. Several sets of powerful crane gearing to lift from 4 to 20 tons, large pile engine with 10 cwt. and 20 cwt. rams, small hand-pile engine.

CARRIAGES, &c.—single horse carts, three-wheeled carts, side and end earth waggons, powerful timber carriage, 2 lighter do., stone trucks, wheelbarrows, and water cart.

TOOLS AND SUNDRIES—bellows, anvils, vices, mandrills, swages, hammers, crowbars, levers, ropes, water casks, and water tank.

BUILDING MATERIALS—tiles, roofing, uprights, window frames, door frames, materials of smiths' and carpenters' shops, large platform 4-inch stuff, and fire bricks.

STABLE STOCK, &c.—gig horse of great symmetry, speed, and power; eight horses for cart, plough, or saddle; chaff cutter, oat crusher, and bean crusher, for either steam or horse-power; racks, mangers, corn-bins, large wood stable with tiled roof; horse sheets, stable utensils; a large quantity of harness, traces, collars, hames, cart saddles, &c.

TIMBER, &c.—several thousand feet of 3-inch planks, square timber and scantling for building and colliery purposes, a large quantity of larch and Scotch fir railway sleepers, garden fencing. Also, 5500 cubic feet of stout MEMEL TIMBER and ROCK ELM, screw-bolted together, outside THE SEA-COFFERDAM at the south end of the dock—to remain till the opening of the dock.

Catalogues in due course.—Purchases can be cheaply removed by river, railway, and turnpike, into the interior, and by sea to any part of the coast.—The sale will commence each day at Ten for Eleven precisely.

Refreshments will be provided for Purchasers.

Payments under £20 in cash; above £20 in approved bills at two months.

Catalogues may be had at Messrs. Craven and Sons' offices, Sunderland Docks; at the *Herald* office, and the Auctioneer's offices, Sunderland; and at the Auctioneer's offices, Royal Arcade, Newcastle-upon-Tyne.—Sunderland, Feb. 6, 1850.

PUBLIC SALE OF IRON RAILS.

MESSRS. BARCLAY AND SKIRVING will SELL, BY PUBLIC AUCTION, within the Royal Exchange Sale Rooms, Queen-street, GLASGOW, upon Wednesday, the 20th day of February current, at Two o'clock afternoon, under warrant of the Sheriff of Lanarkshire, of this date,

TWO THOUSAND FIVE HUNDRED TONS (OR THEREBY) OF WROUGHT-IRON RAILS,

Now lying at the Dundyvan Iron-Works, near Coatbridge. These rails are of the best quality, and form part of a lot which were made for the Glasgow, Dumfries, and Carlisle Railway Company, under a contract, which that company has now repudiated, and for which an action of damages, at the instance of John Wilson, Esq., of Dundyvan, against the said Railway Company, is now pending in the Court of Session.

The rails may be seen on application at the office of the Dundyvan Works.

Terms of Sale.—Purchasers to pay the price before the rails are delivered.

Glasgow, Feb. 14, 1850. BARCLAY & SKIRVING, Auctioneers.

FARMBOROUGH COLLIERY, NEAR BATH, SOMERSET.

MR. JOSEPH HILL respectfully announces that he has received instructions from the proprietors TO SELL, BY AUCTION, on the premises, on Tuesday, the 26th of February, 1850, all the

MACHINERY AND PLANT,

Lately used in Working the before-mentioned Colliery—Comprising

A very powerful and nearly new CONDENSING STEAM-ENGINE, with 31½-inch cylinder, 6-feet stroke, excellent winding and pumping apparatus, and wrought-iron boiler; 150 fathoms of 9, 8, and 6-inch pipes, with suitable working barrels and rods for plunger and lifting pumps; 2 plunger pings, 9 feet long, 7¾ inch diameter, 160 fathoms of 6¼-inch flat-rope, 2 drum ropes, 140 fms. each, horse drum, crab winches, 272 6-feet tram plates, pair of head stocks, 28 feet long, 6-feet pulley-wheel, large treble-power capstan and frame, 2 wrought-iron hudges, dung waggon and pit-runner, 2 cast-iron pillars, 11½ feet by 10 inches, cast-iron 3-inch wheels for wheelbarrows, new cast-iron socket, wrought-iron cap-heads, bell cranks, beds, brasses, and plummer-blocks, 2 wrought-iron screws and brass nuts, a quantity of oak and elm timber, anvil, bellows, vice, smiths' tools in general, a quantity of wrought-iron, a cart-horse, and many other valuable and useful lots not particularised.

N.B.—More descriptive particulars are in course of preparation, and will be ready for delivery 10 days prior to the sale, at the Greyhound Inn, Bath; Saracen's Head, Templegate, Bristol; or from the auctioneer, Paulton, near Bristol, Somerset.

Sale to commence punctually at Eleven o'clock in the forenoon; and to view, apply on the premises.—Dated Feb. 5, 1850.

VALUABLE COAL-FIELD, NEAR LIVERPOOL.

TO BE LET, BY PRIVATE TREATY, all those MINES, VEINS, or BEDS, of COAL, situate, and being under the lands of the late Mr. Wm. Lees, at WHISTON, near Prescot, in the county of Lancaster, comprising a COAL-FIELD of about FIFTY ACRES in extent, and consisting of the following MINES, commonly known by the names of the Cheshire Delf, the Ten Lands, the St. Sebastian, the Sir John, the Prescot Main Delf, the Rushy Park, and the Little Delf.

These coals are of the aggregate thickness of 47 feet, and range at various depths from 35 to 400 yards. With the exception of the Cheshire Delf, which has been partially worked, the mines are entire, and, by experiments lately made, it has been ascertained that they are free fram water. It is proposed, in the first instance, to let only the four uppermost mines, which are of the aggregate thickness of 20 feet, and one of which, the Ten Lands, will average 9 feet of clear coal.

The estate is distant from Prescot 1 mile, from Liverpool 7 miles, and is intersected by the Liverpool and Manchester Railway, from a station on which, closely adjoining, there would be every facility for transporting the coals to the former important mart.

It may be also of importance to add, that the coals underneath the railway may be worked free from the harassing restrictions imposed by the Lands' Consolidation Act.

For further particulars, and to treat for the same, application may be made to Mr. James Green, coal agent, Parkside, Prescot; or personal inquiry may be made of Mr. William Wrigley, Abbey Hills, Oldham.

BLAIR IRON-WORKS.—These extensive IRON-WORKS, with the LEASES of the MINERAL FIELDS, as formerly advertised, will be EXPOSED FOR PUBLIC COMPETITION on or about the month of APRIL next, if not previously disposed of by private bargain.—In the meantime offers will be received, and information afforded, by Mr. Brown, 35, St. Vincent-place, Glasgow.

SWITHLAND AND GROBY SLATE WORKS, LEICESTERSHIRE.—These valuable SLATE QUARRIES, containing large beds of Roofing Slate, Slate Stone, Blocks for Cheese Presses, Milk Slates, &c., are TO BE LET, from Ladyday next, on a lease for 7 or 14 years. There is an excellent house on the works, near Groby, with 12 acres of land, and all convenient machinery for sawing by steam and manufacturing slate.—Steward's Hay, Leicester, Jan. 26, 1850.

CRAIG DDU SLATE COMPANY, FESTINIOG, MERIONETHSHIRE.—The Directors having decided on considerably EXTENDING THE WORKINGS of this VALUABLE QUARRY, in order further to develope the immense resources already laid bare, and to meet the great demand for the Slate, propose to ISSUE A LIMITED NUMBER OF THE RESERVED SHARES. Information will be afforded, and a statement given, at the company's offices, 25, Parliament-street, where application may also be made for shares; or to Mr. Farrar, the company's solicitor, Doctors'-commons.

ASTURIAN MINING COMPANY—IN LIQUIDATION.—Notice is hereby given, that the MONTHLY BALANCE SHEETS of the Company, to the 30th September and 31st October last, prepared subject to the investigation now pending, have been PRESENTED to the Political Chief of the Province of Oviedo, and the ABSTRACTS thereof have been DISTRIBUTED, pursuant to the Resolution of the Special General Meeting of the 27th November last, to the SHAREHOLDERS who have furnished their addresses. All other shareholders will receive copies of the same on stating their addresses, with the numbers of their shares. The accounts relating to the said balance-sheets will be open for inspection at the Company's offices at Mieres and in London, to all shareholders who have paid the Call due the 10th November last, and copies may be had on payment of the usual charges, pursuant to the said resolutions.

By order of the Board of Directors and Liquidators,

9, Austinfriars, London, Feb. 15, 1850. K. MACKENZIE, Secretary.

ASTURIAN MINING COMPANY—IN LIQUIDATION.—All CREDITORS of the COMPANY, and all PERSONS professing to make any CLAIM in right of non-registered or forfeited shares, on which the last call of £2, due the 10th of November last, or any previous Call, has not been paid, are hereby required to forward the particulars of their claims on or before the 9th day of March next, addressed to the undersigned, for to the Secretary of the Company; otherwise this Notice will be relied on to exclude any such claims from and after that date.

By order of the Committee of Investigation, R. MOORE, Chairman.

9, Austinfriars, London, Feb. 12, 1850.

STEAM-ENGINE.—TO BE DISPOSED OF a HIGH-PRESSURE STEAM-ENGINE—cylinder 18½ inches in diameter, 4 feet stroke, equal beam; fly-wheel 14 feet in diameter, double pumping crank, winding shaft, and winding verticals; 1 driving wheel, on the end of the fly-wheel shaft, and 2 spur wheels, on the winding and pumping shaft; a FIVE-TON BOILER, 28 feet long and 6 feet in diameter, egg ends, with the steam and water-pipes connecting the engine and boiler; safety valve, floats, &c. Also, 22 yards of 9-inch PUMP TREES, including clackpiece and windbore, bolts, &c. The engine is quite new, and has never worked further than to try it, and being now connected with the boiler, intending purchasers may see it at work, and it will be disposed of as it now stands, with all its apparatus complete, although not enumerated in this advertisement.

For further particulars, and to view the same, apply to Mr. John Slater, White Rose Colliery, Blackwood, Newport, Monmouthshire.—Feb. 1, 1850.

ECONOMICAL STEAM-ENGINE—Surpassing the Cornish.

CRADDOCK'S PATENT DOUBLE CYLINDER HIGH-PRESSURE EXPANSIVE AND CONDENSING ENGINE,

Alike ADAPTED FOR MARINE, LOCOMOTIVE, AND STATIONARY PURPOSES.

BOILER.—Tubular, free from deposit, and perfectly safe from explosion.
ENGINE.—Not half the weight or bulk of ordinary engines.
FUEL.—Not half that required by the best engines of the common kind.
WATER.—Under 1 gallon per horse-power per day of 10 hours, for all purposes, with air as the medium of condensation if desired.

These engines are erected at a comparatively trifling expense, and are easily worked.

FOR SALE.

TWO 40-horse power ENGINES, suited to condense either by air or water.
ONE 25-horse power ditto ditto ditto
ONE 20-horse power ditto ditto ditto
A PAIR of OSCILLATING MARINE ENGINES, of 10-horse power.

These engines are quite new, with boiler, condenser, and regulating damper—all got up in the best and simplest manner. They are much simpler, and almost beyond comparison more compact than the Cornish engine, also more safe and economical than even those engines, yet the price of the Cornish is nearly double that at which these are offered.—Parties wanting engines will find in the above good bargains.

Apply to THOS. CRADDOCK, engineer, 36, Broad-street, Birmingham.

Also ON SALE, THREE 4-horse HIGH-PRESSURE ENGINES, simply arranged, and well got up.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

TOUGHENED CAST-IRON—STIRLING'S PATENT.

No. 1—For SMALL and MEDIUM CASTINGS.
No. 3—For HEAVY CASTINGS.
No. 3 *(Extra)*—For ROLLS, HEAVY SHAFTS, and VERY HEAVY CASTINGS.

The above is by far the strongest Cast-Iron made, and is now being extensively used where strong castings are required.

Further particulars may be obtained on application to

Messrs. GARDEN & MACANDREW,

27, Queen-street, Cheapside, from whom also the IRON can be PROCURED.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.

Apply to HUTCHISON & CO.,

140, Strand, London; or Tunbridge Wells, Kent, and Caen, Normandy, stating name, address, and capital at command.

N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c.

LICENCES GRANTED.

TO MINERALOGISTS, GEOLOGISTS, CONCHOLOGISTS, &c. HENRY NORRIS, FANCY BOX MANUFACTURER,

35, *DORCHESTER-STREET, NEW NORTH-ROAD, HOXTON, LONDON,*

Respectfully directs attention to his IMPROVED SPECIMEN BOXES, with GLASS TOPS, which have given such general satisfaction to collectors who have already used them. Persons residing in town waited on with patterns, on receipt of letters, addressed as above. A pattern box forwarded by post to any part of the country, on receipt of two postage stamps. Cabinets fitted with cardboard trays to any drawings or designs.

COMBMARTIN AND NORTH DEVON LEAD AND SILVER SMELTING COMPANY.

REGISTERED UNDER THE JOINT-STOCK COMPANIES' ACT.

The SMELTING-WORKS of the above COMPANY are in ACTIVE OPERATION.—SAMPLES of LEAD and SILVERY ORES are requested to be forwarded to Captain Cornelius Bawden, Combmartin, near Ilfracomb, North Devon.

Payment for ores by bill, at three months, or cash if required.

Combmartin, Jan. 1, 1850. THOMAS L. WILLSHIRE, Secretary.

EAST BIRCH TOR TIN MINING COMPANY, DEVON.

Capital £7500—divided into 2500 shares, of £3 each.

Incorporated pursuant to Act of Parliament, 7 and 8 Victoria, cap. 110.

SEVEN HUNDRED SHARES REMAIN TO BE ALLOTTED.

This valuable MINERAL PROPERTY is situate in the parishes of NORTH BOVEY and MANATON, upon DARTMOOR, 18 miles west of Exeter, in the county of Devon.

The mine is held by this company for a perpetually renewable term of years, without fine or premium, at the very low dues of 1-25th of the realised value of the ores. It has hitherto been conducted on the Cost-book system, but was completely registered and incorporated under the Act 7 and 8 Vic., cap. 110, the 28th Nov., 1849, and a Deed of Settlement has been prepared pursuant to that Act, by which arrangements the liabilities of the shareholders and the method of conducting the business of the company have been defined, and the advantages of complete registration secured.

The affairs of the mine are under the management of a board of directors in London, chosen by the shareholders at their annual meeting. General meetings of the shareholders will be held half-yearly (10 days' notice being given), when a full statement of the company's affairs will be submitted to the shareholders. Ample provisions have also been made for an accurate and impartial periodical audit of the company's accounts.

The mine contains 10 distinct lodes—the richness of which has been fully and fairly tested—so that it is certain that, by the employment of about £1500 additional capital, it cannot fail to make a highly productive and dividend-paying mine. Birch Tor and Vitifer Mines, on the same lodes, and immediately adjoining East Birch Tor on the west, have returned a profit of upwards of £100,000 worth of tin.

The shafts, water-wheels, lift of pumps, stamps, workshops, and all necessary apparatus, are complete, so that the additional capital will be expended in sinking to a greater depth, driving levels, and raising tin.

There is ample water-power to work the mine to a great depth, whereby the large expense of a steam-engine is saved.

The mine has been brought to its present promising state by an outlay on the part of a small proprietary of £12,000. Of this sum £2500 were expended in driving the crosscut adit to intersect the lodes and unwater the mine. Upwards of £5000 has been returned by the sale of ores from the present shallow workings; and it is confidently anticipated that, by the disposal of the 700 reserved shares, the company's funds will be amply sufficient to ensure complete success.

The object now is to cut the extreme north lode No. 1, which has proved so productive in the adjoining mine.

Some excellent rocks of tin have been recently raised from No. 5 lode, and the ore at the last sampling fetched £42 per ton.

2, Winchester-buildings, February, 1850.

TAMAR SILVER-LEAD MINING COMPANY.—*Salvador House, Bishopsgate, February 7, 1850.*

At a SPECIAL GENERAL MEETING of the shareholders in this Company, held this day,—P. N. JOHNSON, Esq., F.R.S., in the chair,—the following resolutions were passed unanimously:—

That the directors be empowered to retain the profits until the same amount to Ten Shillings per share; after which the Certificates of Shares to be given in and credited with Ten Shillings per share, as paid call, and debited with Ten Shillings per share, as paid dividend.

That the Thanks of this Meeting be presented to P. N. Johnson, Esq., for his kindness and urbanity in the chair.

That the Thanks of the Meeting be given to Mr. Stainsby, and the other Directors, for their excellent management of the Company's Property.

AGENT FOR A LEAD MINE.—WANTED, an AGENT, to take the MANAGEMENT of a LEAD MINE, situate in MONTGOMERYSHIRE, now in full work. He will be required to devote his entire time to the mine, and reside on the spot, where there is a convenient manager's house.—Applications in writing, with testimonials of qualifications and character, to be addressed to Mr. C. H. Capper, engineer, Birmingham, on or before the 1st of March next.

WANTED,—By an experienced practical MINER, who is thoroughly acquainted with Mining in all its branches, Geological and Mineralogical Formations, Assaying, &c., and who has for many years had the management of extensive mines in the United Kingdom, a similar SITUATION, either at home or abroad. Letters to be addressed "W. T."; or most unexceptionable references, as to character and ability, may be inspected at the *Mining Journal* office, 26, Fleet-street, London.

Dated February 3, 1850.

TO IRONMASTERS AND OTHERS.—A married man, 30 years of age, well acquainted with commercial transactions and accounts—a good mechanical draftsman, accustomed to estimating for iron-work, and taking the oversight of workmen, wishes to OBTAIN some ACTIVE RESPONSIBLE SITUATION. He has some knowledge of the iron trade, and of the general routine of a forge and foundry, and can give good references and security if required.—Address (free) to "D. E.," care of A. Fullarton and Co., 106, Newgate-street, London.

TO IRONMASTERS OR OTHERS.—The Advertiser has a PATENT for MACHINERY, of little cost, which will ENSURE the SALE of SEVERAL THOUSAND TONS OF IRON YEARLY, and will realise 25 per cent. on returns. It may be licensed, or worked jointly with the proprietor, dividing the profits. None but principals need apply.—Address A. B. Izen, 60, Moorgate-street.

BARYTA.—The Advertiser having obtained Letters Patent for a PROCESS, in which many tons of BARYTA, or STRONTIA, in a prepared state, will be ANNUALLY REQUIRED, wishes to meet with PARTIES disposed to FURNISH the same.—Cost and particulars thereof to be addressed to Mr. Horsley, at the Patent Office, 210, Strand, London.

TO BE SOLD,—A MOST VALUABLE PATENT—applicable to a great variety of articles in every-day use, and which command an excellent profit to the manufacturer.—For further particulars apply to Mr. J. Baker, commission agent, Wolverhampton.

STEAM-ENGINE FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, a 33-inch CYLINDER STEAM-ENGINE, 8 feet stroke, equal beam, with Steam Case, Brass Air Pump, Boiler and Connections, and Capstan and Shears.—Application to be made to Mr. F. Pryor, Bell Cottage, Redruth.—Jan. 2, 1850.

CAMBORNE CONSOLS COPPER MINES, CAMBORNE, CORNWALL.—OFFICES REMOVED to 22, NEW BRIDGE-STREET, BLACKFRIARS.—London, January, 1850. H. L. T. VON USTER, Secretary.

COURT GRANGE SILVER-LEAD MINES, CARDIGANSHIRE.—OFFICES REMOVED to No. 22, NEW BRIDGE-STREET, BLACKFRIARS.—London, January, 1850. H. L. T. VON USTER, Secretary.

KESWICK MINING COMPANY.—OFFICES REMOVED TO No. 76, CORNHILL.

London, February, 1850. JOHN WATSON, Secretary.

MR. JOHN BOYD (Agent for Messrs. Bolckow and Vaughan of the Middlesbrough and Witton-park Iron-works) SUPPLIES all descriptions of RAIL, BAR, and BOLT-IRON, Retorts, Pipes, Chairs, and general Castings; also Forgings and Chain Cables, and Anchors.

OFFICE, 15, EAST INDIA CHAMBERS, LEADENHALL-STREET.

MINING OFFICES, No. 3, GEORGE-YARD, LOMBARD-STREET, LONDON.—Mr. THOS. P. THOMAS is a BUYER of South Bassett, South Frances, South Tolgus, West Wheal Jewel, Cook's Kitchen, East Buller, Wheal Seton, and Wheal Trelawny; and is a SELLER of Providence Mines, St. Ives Consols, West Caradon, Treviskey and Barrier, Wheal Comfort, and Tregorden.

Mr. T. P. THOMAS will at all times feel pleasure in giving information as to the Cornish, Welsh, and Foreign Mines, upon application.

MR. T. A. READWIN, MINING OFFICES, 2, *WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.*

MR. RYE is a BUYER in Stray Park, Treviskey, South Tolgus, Condurrow, and United Mines.—For particulars, apply at his office, No. 77, Old Broad-street, City.

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR.

No. 15, OLD BROAD-STREET, LONDON.

MR. GEORGE BATE, JUN., CIVIL ENGINEER AND SURVEYOR, *WOLVERHAMPTON.*

Offices in Queen-street, corner of Piper's-row.

N.B.—UNDERGROUND MINING SURVEYS accurately executed.

SHARES BOUGHT and SOLD in the following MINES:—

SOUTH CARADON (Copper).

HENNOCK (Silver-Lead).	BRAY (Copper).
ASHBURTON UNITED.	TRELAWNY (Lead).
LLWYNMALEES (Lead).	MARY ANN (Lead).
BODMIN CONSOLS (Lead).	GUINAS (Lead).

Apply at No. 2, Royal Exchange-buildings (first floor); or 35, Craven-street, Strand.

COPIAPO MINING COMPANY.—Notice is hereby given, that the HALF-YEARLY MEETING of the Shareholders in this Company will be HELD at their office, No. 22, Austinfriars, on Thursday, the 21st inst., at One o'clock precisely. By order of the Directors,

22, Austinfriars, Feb. 8, 1850. FRED. GRELLET, Secretary.

COMBLAWN MINE.—Notice is hereby given, that at a Meeting of shareholders, held at the offices, 4, King-street, Cheapside, on Thursday, the 14th inst., a CALL of TWO POUNDS per share was made—of which 10s. per share is payable in 14 days, and the remaining 30s. per share as wanted, at the discretion of the committee. By order of the Committee,

4, King-street, Cheapside, Feb. 15, 1850. JAMES CROFTS, Secretary.

EAST OF SCOTLAND MALLEABLE IRON COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders of the EAST OF SCOTLAND MALLEABLE IRON COMPANY will be HELD within the Town House of Dunfermline upon Thursday, the 22d day of August next, 1850, at Twelve o'clock noon, for the purpose of considering a proposal to DISSOLVE the said COMPANY, and to SELL and realise the whole PROPERTY and ESTATE, and FUNDS and EFFECTS of the Company, and finally to wind-up the Company's affairs—all in terms of the 37th clause of the Contract of Copartnery of the said Company.

By order of the Directors,

JAMES INGLIS, Chairman.

Dunfermline, Feb. 6, 1850. JOHN DRYSDALE, Interim Secretary.

NATIONAL BRAZILIAN MINING ASSOCIATION— CAUTION.—Whereas NINETY-SIX SHARES in the above association have been STOLEN—parties are hereby CAUTIONED AGAINST BUYING or RECEIVING the SAME. The numbers, which are as follows, have been stopped at the office:

10 Certificates of five shares each—Nos. 12,061 to 12,110.
46 Certificates of one share each—Nos. 800 to 845.

Any information to be sent to Mr. Barker's, 12, Birchin-lane, Cornhill.

RHYMNEY IRON COMPANY.—The ADJOURNED GENERAL MEETING of the proprietors of this company will be HELD at the company's offices, 7, Laurence Pountney-hill, on Wednesday, the 27th inst., at One o'clock precisely, to receive the Report of the Committee appointed on the 21st of November last.

7, Laurence Pountney-hill, London, Feb. 14, 1850. T. E. SCUDAMORE, Sec.

REAL DEL MONTE MINING COMPANY.—Any PER- SONS having CLAIMS upon this Company (which was dissolved by Resolutions of General Meetings, held on the 25th September and 30th October, 1848), are requested to send in the particulars of the same to me, at No. 6, Queen-street-place, Southwark-bridge, London, before the 10th April next. By order of the Directors,

London, Feb. 11, 1850. JOHN PHILLIPS, Secretary.

REAL DEL MONTE MINING COMPANY.—Notice is hereby given, that on Wednesdays and Saturdays, after the 10th day of April next, the sum of TWO POUNDS will be PAYABLE upon every RED DEBENTURE, and FOUR POUNDS upon every outstanding FIFTY POUNDS LOAN of 1827, being the first division of proceeds of sale of the Company's property. The Red Debentures, or the subscription receipts for the Loans, must be left with me, at the office, No. 6, Queen-street-place, Southwark-bridge, London, for at least one week previous to the payment of the dividend. The holders of the above-mentioned £50 loans of 1827 will, at the same time, be paid the proportion that may be due to them of the Trust Fund set aside in the year 1843. By order of the Directors,

London, Feb. 11, 1850. JOHN PHILLIPS, Secretary.

ACCIDENTS.

Pyle.—Three colliers were severely burned at Bryndu Colliery, while endeavouring to test the "damp." One of them being so incautious as to enter with a naked candle, the gas ignited, and burned him seriously, and his comrades received slighter injuries.

Durham.—James Cruddas, aged four years, a pitman's son, died from injuries received on the Ludworth waggonway.—Eleanor Shannon, aged 14, was struck down by a coal-train at Trimdon Grange Colliery, and on the 30th ult. she died.

Bolton.—As John Doodson, aged 10 years, a drawer in a mine belonging to Messrs. Knowles and Stott, had completed his work, and was ascending the pit by the ladders, on arriving at the fourth landing he slipped, and, falling down, his body came in contact with the second landing. He was picked up immediately, but died directly after.

Colliery Accident.—On Tuesday an inquest was held at a colliery near Chowbent, where a shocking and most fatal accident occurred on Saturday. The mines belong to Mr. J. Fletcher, and the colliers having descended to work, and discovered the presence of a more than ordinary amount of gas in one of the bays where they had to work, endeavoured to restore it to a better state, by disturbing the atmosphere. For this purpose they beat their jackets against the sides of the bay, and the gas was thus driven into the draughtway towards the mouth of the bottom of the shaft, and would naturally make its escape into the open air. Unfortunately, however, the colliers, not taking the necessary precautionary steps, fell a sacrifice to their own imprudence. A lighted candle had been left with the flame exposed to the gas thus disturbed, and in its way to the shaft, and an explosion was the consequence. A great number of the colliers were badly burned before they could be removed, and it is said that five of them have died.—*Derby Reporter.*

Bromley.—As Joseph Homer was ascending the shaft of a pit belonging to Messrs. Firmstone, a brick out of the side of the shaft fell, and killed him.

Brierley Hill—A Pit Drowned Out.—About mid-day, on Monday last, a distressing occurrence took place at the Seven Dwellings, by which the lives of two boys, named Samuel Millington *alias* Block, and Richard Hollies, have been sacrificed, and which was very near being attended with more fatal consequences. It appears that the unfortunate lads were down a pit belonging to Mr. Hodgson, which is situate at the Seven Dwellings, close to the canal side, when, from the unsafe state of the earth—probably from what may be termed here a "crownings-in"—the water from the canal rushed into the shaft of the pit with such violence as to cause the mouth of the pit to sink, and with it the whole of the pit's frame to be swallowed up. The gin by which the pit was worked also fell, and rolling upon a man named Henry Dean, who was on the bank, severely fractured his right leg. He was promptly attended by Mr. Hudson, surgeon. A hovel which was on the pit bank shortly gave way, and was also precipitated down the shaft and was buried. The waste of water was immense, and it is feared the bodies of the ill-fated boys will never be found, as the pit, which had been scaffolded for the purpose of getting the thin mine (the thick coal having already been got) having been forced out by the rush of the water, and the pit being very deep, it is difficult to say where or to what part of the pit (the shaft of which, we may state, was almost jammed up to a level with the surface of the earth) the bodies have been carried. It was only a few minutes before the sad occurrence that two or three men ascended the shaft of the pit, and were at the moment of the accident in the act of preparing to draw the lads out.

Wheal Nul.—T. Richards, of Leeds Town, fell into a shaft 20 fms. deep, and was killed.

Death from Falling Down an Old Coal Pit.—Thos. Cox, about nine years old, lost his life through the reprehensible, though shamefully common, practice of leaving old coal pits without fence or covering. The poor fellow left his home, with his father, to proceed to his work in a coal pit, near Darlaston; but having separated, to seek shelter from the weather, the boy was ultimately discovered frightfully mutilated at the bottom of an old pit, which the boy's father describes as being "situate in the Old Squirrel Field, near Bilston, the property of Mr. Loxdale, and in the occupation of Mr. William Baldwin, of Bilston, coal and ironmaster." A public road passes within 20 yds. of the pit in question, and there is no fence against either the road or the pit. The pit is about 35 yards deep. There are two or three other pits near the one in question in an equally dangerous state.

Swansea.—W. Morris was killed while working in Messrs. Glasbrook and Richards's Gorse Colliery.

Fearful Colliery Explosion.—In last week's Journal we briefly announced that a fearful disaster had taken place at the Dudley Wood Coal-pit, situated near the Five Ways, on Cradley Heath, by which four persons met with an untimely death. On Tuesday afternoon the inhabitants of the district near the Five Ways were startled by a very loud explosion, and soon afterwards a cloud of smoke was seen to rise from the above pit. The pit bank was soon crowded with people, when it was found that the explosion had carried away the iron pulley which supported the chain above the mouth of the pit, and broken the massive iron spokes and rim into fragments. The "skip," together with eight or ten broad iron bands called "rings," which are used for keeping the coals together during their ascent, were descending at the moment of the accident, and these were shot out of the shaft like a bullet from a gun, the greater part of them eventually falling 100 yards from the mouth of the pit. One ring was carried much further. Half the work-people had left the pit previous to the explosion, but there were still 17 individuals below, and an hour elapsed before the slightest means of relief could be adopted. The pit is 120 yards deep; and below the coal seam, in which the works lie, there is an iron mine which is reached by a shaft sunk within a few yards of that which leads to the coal, one engine being employed for winding the minerals up both shafts. By the system of ventilation adopted, the fresh air is drawn down the coal shaft, and carried through the workings in the coal mine, after which it passes by a circuitous route in the "floors" into the iron-shaft, and re-ascends through it to the surface. At one part of the coal workings, not far distant from the shaft, a small shaft or well has been sunk from the coal mine into the iron mine, and a current of air passing down this aperture ventilates the lower mine, and then ascends the iron shaft in company with the air which has passed through the workings in the coal mine. It was at length found that the explosion had completely reversed the current of air, so that the draught set down the iron shaft instead of up it. An intrepid fellow, named John Webb, taking advantage of this alteration, descended the iron shaft, and climbed up the ventilating well with a safety-lamp in his hand, and although he suffered much from the obnoxious vapour, he penetrated the coal workings nearly to the bottom of the coal shaft. At this spot he found several men in an exhausted condition, but sensible, and amongst these Benjamin Griffiths, the superintendent of the coal workings. A small aperture, large enough for a man to creep through, and made for the purpose of draining the water from the upper into the lower mine, had given a passage for a stream of purer air to ascend, and this had, undoubtedly, saved their lives. Other persons were afterwards induced to follow Webb, and, by dint of great exertion, the people were all got out before midnight. Four youths were brought out dead. Most of the men were burned, more or less, but not very seriously. One man, named George Palmer, who was at work at the bottom of the shaft, as a "hanger-on," was hurled some distance by the rush of air, and buried under a heap of rubbish. Griffiths, the superintendent, who, it appears, was the only person besides the "hanger-on" that was near the bottom of the shaft had just left the stable, and gone about six yards towards the workings, when he felt the explosion, and was blown back into the stable with great violence. As soon as he recovered from the shock, he tried to find his way to some place where the air was breathable, and at last discovered the current which came from the lower mine through the drain. In about twenty minutes a man named Dymock came to him, quite exhausted, and said that he was nearly dead; then some others followed, one by one at intervals, from more distant parts of the workings, and in the same state. Some of them fell before reaching the better ventilated part, and were dragged forward by those who had, in some measure, recruited their strength with the fresh air. The four lads, it would seem, were all pretty near the spot, where the explosion commenced, and being more severely affected by it than the rest, perished through inability to proceed towards the shaft. There were three horses below; one of these was killed on the spot, and another much burnt. This animal remained in the pit amongst the foul air from Tuesday evening till Thursday morning, when it was taken out, and appeared likely to live. Two of the boys who were killed were brothers, named Webster; a third, who was only 10 years of age, was the son of Griffiths, the superintendent; and the fourth was Joseph Warwick. It is thought the fire commenced about midway between the shaft and the head of the workings, near a "bolt-hole" leading to an old working now dammed off. An inequality in the roof near this spot would allow of a little accumulation of the vapour unperceived, though not to so great an extent as to cause the effects now witnessed. The pit is one which at certain seasons is liable to become charged with "sulphur;" but it is not considered particularly dangerous by the colliers, although four or five years ago 11 men were killed in it by a similar explosion. When the wind changes to a southerly direction, or when rain is about to fall, the "sulphur" then is perceived, and the men use safety lamps, but at ordinary times they work with unprotected candles, and were doing so when the last blast came. We should state that as the poor miners were handed up to the surface they were placed in a gig and carried home, and that the proprietors of the mine—Messrs. Pargeter and Darby—were early upon the spot, and superintended with great anxiety the labours of those employed in the rescue. Mr. Kempson, of Brierley-hill, surgeon to the pit, and another medical gentleman, were also present, and attended to the parties who needed their care. It is only about four years ago that a similar accident occurred at the same colliery, but the sacrifice of life on that occasion, which included one of the butties of the pit, his son, and also the "doggy," was more serious.

[From the *Plymouth Journal.*]

The high standard for copper and tin, and the high advancing price of lead, is producing its natural result in the extension of mining, and, as stated in our last, in the western district many adventures have been commenced, and some of the old mines resuscitated. Amongst these our correspondent informs us are Wheal Grenville, Sole Carne, South Condurrow, North Basset, Wheal Ann, and Trenoweth, and the other setts have been taken up in the Cumbane and Hayle districts. In our own locality mining has revived. All the shares in Wheal Gennys, near Knackersknowle, are not only taken up, but are in demand at a premium. The share list for the Looseleigh sett, is also full. The appearance of the lode in the eastern ground in Plymouth Wheal Yeoland, will doubtless lead to the vigorous working of Plymouth Wheal Yeoland East, and a sett of Chubb Tor Wood still further east, and near to the granite, has been granted. The last party who worked have driven a level to within a few fathoms of the lode, and which can be seen in a gully or ravine a little to the west of the present end, and from 50 to 60 fms. of backs can be here laid open without the erection of any machinery; added to this, there is an abundant supply of water power; moreover the Plymouth and Dartmoor Railway bound, the sett on the east, and the facility and cheapness of carriage must prove highly valuable. A very valuable lode of copper has been discovered in the land of George Leach, Esq. and others, in the parish of Walkhampton, and 93*l.* worth of ore has been raised above the adit level at a cost of 50*l.*; the lode is regular and well-defined, and promises to make a good and profitable mine. On the lands of Mr. William Wyman, at El Bridge, on the western bank of the Tamar, near Cargreen, a very fine and exceedingly rich lode of silver lead has been discovered, and is being worked. Vigorous and economical working, and the absence of jobbing alone are wanting, to insure that amount of capital to be invested in, and attention to be devoted to, British mining which this branch of industry deserves.

EAST CROWNDALE.—On Rixhill lode, we have resumed sinking for more than a week under the 28 fathom level. The ends both east and west in this (28 fm. level), are laying open tribute ground.

WHEAL FRANCO.—The 62 fm. level east is suspended, and the men who were in this end are put to rise in the winze between the 47 and 62 fm. levels. In this rise the lode is from 3 to 4 ft. wide, and producing good stones of ore; and the lode, in sinking from the 47 to meet the rise, is much of the same character. The lode in the 62 fm. level west is from 5 to 6 ft. wide, and contains ore. The pitches are without alteration. Our sampling is about 100 tons. I think that if the lobby were cut, and the shaft sunk to a deeper level, that there is every probability, indeed I have no doubt, that it would make a good mine, and I would by all means advise this, and Capt. Puckey is of the same opinion.

TAVISTOCK CONSOLS.—The adit end is now upwards of 50 fms. east of the shaft, and for the whole of this distance there has been a large clean lode, from 3 to 6 ft. wide, composed of mundic, peach, gossan, and spar, and in the end there is a little tin. The engine-shaft is now down 44 fms. The lode is at present divided by a base of killas; we are carrying the south part only, this is 2 ft. wide, composed of mundic, peach, and tin, which can now be seen in the stone. The main part of the lode is to the north of our shaft.

RISCA COAL WORKS.—It is rumoured that Mr. Russell, the much respected owner of this property, has disposed of these works to a company. There is very little doubt, as the coal commands a ready and steady sale, but that the purchasers will reap a good harvest from their speculation.—*Merthyr Guardian.*

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Asiatic—5, New Burlington-street	2	P.M.
MONDAY	Statistical—12, St. James'-square	8	P.M.
	British Architects—16, Grosvenor-street	8	P.M.
	Chemical—142, Strand	8	P.M.
	Medical—3, Bolt-court, Fleet-street	8	P.M.
	Pathological—21, Regent-street, Waterloo-place	8	P.M.
TUESDAY	Linnæan—Soho-square	8	P.M.
	Horticultural—21, Regent-street	3½	P.M.
	Civil Engineers—25, Great George-street	8	P.M.
THURSDAY	Royal—Somerset-house	8	P.M.
	Antiquaries—Somerset-house	8	P.M.
FRIDAY	Royal Institution—Albemarle-street	8½	P.M.
	Philological—London Library, 19, St. James's square	8	P.M.
SATURDAY	Royal Botanic—Inner Circle, Regent's Park	8½	P.M.
	Westminster Medical—17, Saville-row	8	P.M.

INSTITUTION OF CIVIL ENGINEERS.

FEBRUARY 12.—WILLIAM CUBITT, Esq. (President), in the Chair.

The first paper read was "An Account of the Cast-Iron Lighthouse Tower on Gibb's Hill, in the Bermudas," by Mr. P. Paterson.—The site chosen for this tower was in lat. 32° 14′ N., and long. 64° 50′ W., being the southern part of the Bermudas, at which point they are most safely approached. It was at first determined to construct the tower with the materials found in the islands; but, after some progress had been made in quarrying and dressing the stone, it was ascertained to be of too friable a nature for the purpose, so that the Home Government instructed Mr. Alex. Gordon, M. Inst. C.E., to prepare a design for a cast-iron tower, similar to that which had been erected from his designs at Morant Point, Jamaica, and which had proved very successful. The form of this tower was that of a strong conoidal figure, 105 ft. 9 in. in height, terminated at the top by an inverted conoidal figure, 4 ft. high, in lieu of a capital; its extreme outside diameter was 24 ft., at the narrowest part 14 ft., and at the top 20 ft. The external shell was constructed of 135 concentric cast-iron plates, having inside flanges, and varing in thickness from 1 inch at the base to about ¾ inch at the top. In the centre of the tower there was a hollow cast-iron column, 18 in. in diameter in the inside, and of ¾-inch metal, for supporting Fresnel's Dioptric apparatus, and in which the revolving weight descended; it was also used, in the day-time, for the raising and lowering of stores, and likewise contained the waste-water pipe. The lower part of the tower was filled with concrete, leaving a well, faced with brickwork, about 8 ft. in diameter, and 20 ft. in depth, in the centre. Above this were the seven floors, the two lower ones being lined with brickwork, and used as store rooms, and the upper ones, lined with sheet-iron, were used as dwelling rooms for the light-keeper. The details were then given of the mode of constructing the floors, the windows, the staircases, and of attaching the lantern and light room to the main structure; it was stated that the light was visible from all points of the compass, excepting when obscured by the high land between Gibb's Hill and Castle Harbour, from the deck of a vessel at a distance of about 27 miles, and possibly even at a still greater distance. The structure occupied less than one year in its actual erection, the different parts having been landed about the end of November, 1844, the first plate being erected on Gibb's Hill on the 19th December, 1844, and the last plate of the tower on the 9th October, 1845. The whole cost of the structure, including the lanthorn and light apparatus, was stated to have been about 7690*l.*, and the annual expense of maintaining it about 450*l.*

The next paper read was "A Description of Sir George Cayley's Hot Air Engine," by Mr. W. W. Poingdestre. After entering briefly into the theoretical considerations of the expansion of heated aëriform bodies, and detailing the attempts made by Lieut. Ericsson, for employing hot air, instead of steam, as a prime mover, the author proceeded to state, that in 1837, Sir George Cayley, Bart., Assoc. Inst. C.E., applied the products of combustion from close furnaces, so that they should act at once upon a piston, in a cylinder, similar in every respect to that of a single acting steam-engine. The engine consisted of a generator of heat, a working cylinder, and an air-pump or blower, the air-pump being half the size of the cylinder, and blowing air into, and through, a fire perfectly enclosed within the generator; the doors of the furnace were made perfectly air-tight as soon as the fire was well got up, the first impulse being given to the engine by throwing a few jets of water upon the fire, which caused the air-pump to work immediately, and continued so for hours; the fire being replenished by stopping off the blast from the furnace, and opening the upper bonnet. After the air had passed through the fire, the gaseous products of combustion, generally at a temperature of 600° Fah., passed laterally through a chamber, used for separating them from any ashes, or cinders, into the working cylinder before alluded to.

The difficulties attending this description of engine, were the liability of the working parts to be deranged, by the great sensible heat destroying the valves, pistons, and cylinders, and carbonizing the lubricating oil. It was stated, that Mr. A. Gordon, M. Inst. C.E., had made a successful experiment, on the application of the heated products of combustion for propelling a boat, without the intervention of any machinery, between the furnace and the water to be acted upon. The paper announced to be read at the meeting of Tuesday, the 19th Feb., was "Description of the Iron Roof over the Railway Station, Lime-street, Liverpool," by Mr. Richard Turner.

RAILWAY WORKS OVER A TRACT OF BOGS.

At a late meeting of the Institution of Civil Engineers of Ireland, a paper was read descriptive of the construction of the Midland Great Western Railway of Ireland, over a tract of bogs, in the counties of Meath and Westmeath, by George W. Hemans, Engineer-in-chief. The railway from Dublin to Mullingar was projected, from motives of interest and policy, to follow the line, and occupy the banks, of the Royal Canal. The canal banks afforded some facilities for the construction of a railway, but it soon became evident that there were also disadvantages in following them too closely. The earth-works in constructing the canal had been very heavy in character, with some of the deep cuttings through rock; and to relieve them as much as possible, the canal had been laid out to follow every sinuosity of the ground which offered a favourable level. The railway, as far as Mullingar, was also laid out along nearly the whole of these sinuosities, and there being great anxiety to open at least a portion of it at the earliest period, it was at once, on the passing of the Bill, put into a contractor's hand for one-half the distance (as far as Enfield), and rapidly constructed on the canal banks. During the progress of these works, it was found to be desirable to avoid constructing the remainder of the line on a continued system of curves, which, although no longer, by well-informed engineers, considered a source of danger, are decidedly objectionable, as offering a resistance to the trains, causing greater friction, wear and tear, consumption of fuel, and loss of time, besides lengthening the distance. In considering the plans for the second division of the line, between Enfield and Mullingar, the canal bank, which is a continued series of curves, was clearly to be avoided; but another difficulty presented itself on the straight line—the chord to these curves—it would have to traverse a long line of bogs, which, on careful examination with the boring-rod, proved to be from 25 to as much as 70 feet deep. Some of them were swell bogs of the softest, pulpy nature, having gradually risen to a higher level than the surrounding country, and holding much water in suspension. After an extended examination on the subject, particularly in reference to drainage, it was at length apparent that one of the causes of the excess of water, and consequent want of solidity in these bogs, was the position of the canal embankment, traversing the edges of them for a great distance, and completely intercepting all drainage from them along the general fall of the country towards the river Deal. The following general plan was then at once resolved upon:—First, immediately to open full and sufficient new outlets for the escape of suspended water from the whole area; next, to form a system of drains all along and across the intended line; and, finally, as a fixed principle, not to attempt either to excavate or embank the line, but to lay the rails on the natural level of the high bogs, trusting to drainage only to reduce the parts that were too high. With tolerable confidence in this plan, a Deviation Bill was passed through Parliament, and the straight line, traversing about eight miles of deep bog, was immediately commenced. An old wooden shoot, nine inches square, which was the sole outlet for the drainage of a district of about 1500 square acres of wet bog, was the most ineffective point of the existing drainage, and was, therefore, the first to demand improvement. The banks and bottom of the canal at the place consist of clay artificially superposed on the cut away bog, lying on fine gravel of a very loose, treacherous description, being of a mixed sandy and marly nature. Having resolved on introducing a tunnel culvert, three feet diameter, under the canal at this spot, and that its invert should be six feet lower than the existing shoot, it became a matter of anxious consideration how to do this, in such bad ground, without interfering with the navigation of the canal, or running the risk of bursting a leak in the bottom. The canal level at this stage is 20 miles long, without a lock, and a breach would have been a serious affair.

Mr. Hemans here described very minutely the details of the execution of this difficult work, which was altogether very successful, and secured the command for drainage of nearly four miles of the line of railway. The description of this important operation was further illustrated by reference to several drawings prepared for the purpose.

While the foregoing work was in progress, a sum of about 1000*l.* was being expended in the sinking a length of some miles of a river, and underpinning a culvert, ten feet wide, leading out of the next district of bogs.

This underpinning and building a new invert, at a level 4 ft. below the old one, was also a work requiring great caution. The weight of the embankment and the canal overhead was very great, and here also a breach would have caused extensive damages. As soon as these outlets were ready, the drains in the bog were opened. Mr. Hemans next proceeded to enter into a very clear explanation of the plan of operation pursued in the drainage of the surface of the bogs destined to receive the upper works of the railroad. He then described the nature of the soling finally decided upon and adopted, having given an account of the results of experiments on the several descriptions of soling which had been tested. The construction of the upper works of the railroad were minutely detailed, and explanatory drawings were exhibited. The mode of operation adopted in conveying this line of railway over the bogs of most unpromising aspect was eminently successful, and as the details of the works were so very different from the very expensive process generally adopted, and sometimes with but little success, the account was particularly interesting to the engineering world. Mr. Hemans having made some observations on the cost of maintaining railways constructed through bogs, and also on a paper of great interest by the Messrs. Mullens, published in the second volume of the *Transactions of the Institute of Civil Engineers of Ireland*, concluded by reading a detailed estimate of the cost of these works, which clearly showed the possibility of constructing a double line of railway over deep bogs, when treated as described by him, at a cost not exceeding 6000*l.* per mile, including all expenses.

These papers gave rise to much interesting discussion.

REVIVAL OF RAILWAY PROPERTY—LIGHT ENGINES.

In the report of the Cork and Bandon Railway Company, submitted at their meeting on the 13th inst., we find the following facts, confirmatory of the belief that much may be accomplishd towards the revival of railway property by the introduction of light engines:—

"The passenger trains are conveyed by the 'light,' or small, engines, which continue to afford most satisfactory proof of their efficiency and economy.

The trains frequently consist of the following stock, all fairly laden:—

One large 1st and 2d class carriage, for 58 passengers.
One 3d class carriage, for 40 passengers.
One horse-box, for three horses.
One carriage-truck.

Such trains are conveyed between Bandon and Ballinhassig station in 20 minutes, being at the rate of 30 miles per hour, including stoppages.

The daily consumption of coke for each of these engines has been most particularly registered, and the average quantity of Newcastle coke consumed per diem is as follows:—

Consumed in lighting engine—time occupied two hours	*Cwts.*	2	0	16
Consumed standing in steam—time occupied eight hours		2	1	17
Consumed in running 60 miles—time occupied two hours		1	3	26
Total daily consumption	*Cwts.*	6	2	3

Which is equivalent to 12 1-5th lbs. per mile per day of 12 hours; but it will be seen that the running time is only two hours, during which the consumption is not more than 3½ lbs. per mile.—The average daily consumption of the company's ordinary-sized engine, with the same work, is 22½ lbs. per mile per day, or nearly double that of the light engines; and the same difference also arises between the two classes of engines in the consumption of oil, grease, &c., so that an important saving has been effected in the working expenses by the adoption of engines whose powers and dimensions are in proportion to the loads they are required to convey."

RAILWAY ECONOMY.—Some two or three months since we described a new system of permanent way—a combined cast-iron chain and sleeper—which had been laid down in experimental lengths upon the South-Eastern line, by the inventor, Mr. Barlow, the engineer in chief of the company. Since we directed attention to this application of cast-iron sleepers, other experimental lengths have been laid down upon the most trying curves and embankments of the South-Eastern line, and the new system has, we understand, been found to wear most admirably upon such portions of the railway. Mr. Barlow expresses his conviction that a considerably lighter cast-iron sleepers than the one laid down by him will be stong enough to resist the wear and tear of the engines. Mr. Barlow, in a very valuable report which he has made to the directors of the South-Eastern Company, respecting this new system of permanent way, states, as the result of his experience, that—"The difference in favour of the cast-iron may, therefore, be called, in round numbers, 50*l.* per mile per annum, assuming a durability of 20 years only for the cast-iron, which is a less period than experience justifies in assigning to this material; and no sum is allowed in this estimate for the diminished wear of the rails from the avoidance of the blows and the effect of the expansion. In addition to that of durability, there are other advantages, which there is every reason to expect will be obtained from the iron road. The simplicity in the construction, and the reduction in the number of parts of which the road is composed, combined with the facility of drainage and repair, will, no doubt, have the effect of reducing the cost of maintenance in a larger degree, as well as that of renewal, as the former is necessarily dependent on the latter. The effect of the joint plate is effectually to secure the ends of the rails from motion, and renders the joint as even as any other part of the rail, by which all the noise and clatter of the ordinary road is avoided; and, from the rails being more frequently supported, and resting on a rigid foundation of iron, instead of an elastic one of wood, which springs under the weight of the engine as it travels, there is no doubt in my mind that the tractive force required will be materially reduced."

BRIGHTON, LEWES, AND TONBRIDGE WELLS.—Yesterday, upwards of 500 out of the 1800 shareholders liable as contributories to pay off the outstanding claims of this concern, amounting to upwards of 5000*l.*, were summoned before the Master in Chancery, Sir William Horne, to show cause why they should not be held liable as contributories. The court was insufferably full. It was contended on the part of several shareholders that the allotment of shares was illegal, the shares having been allotted by one or two only out of the seven persons constituting the committee for that purpose, no entry of whose appointment appeared on the books; that the shares were allotted precipitately after the panic, and by two persons only, who had neither of them taken their qualification as directors, nor paid the deposit on their shares. Nalder, the secretary, was called to show that these persons were delegated by the larger body to allot. The Master decided that the allotment was good, that all who were simple allottees were liable, and that the company came judicially within the jurisdiction of the Act.

DENDRE VALLEY RAILWAY.—An order in Chancery has just been issued for the winding-up of this company's affairs.

DIRECT EXETER, PLYMOUTH, AND DEVONPORT RAILWAY.—On Saturday Master Sir W. Horne, proceeded with the list of shareholders in this undertaking, and placed upon the list as liable several of the provisional committee, on the ground of having lent their names to the public promotion of the scheme

DIRECT WEST-END AND CROYDON RAILWAY.—The Master Tinney has given his decision, to the effect that the letters of allotment addressed by the provisional committee to class 2 of allottees, substantially varied from the letter of application for shares, that the two together did not form a contract, nor was there any subsequent acceptance on the part of the applicants. The effect of this decision will be to absolve from liability all those persons who were mere allottees, and likewise all those who paid 2s. 6d. per share, and received back their letters of allotment, leaving the provisional committee and promoters as the only persons liable to pay off the debts of the company.

SHREWSBURY AND LEICESTER.—On Friday, the Master Senior appointed Mr. Parkin, official manager, to proceed with the winding-up of this company's affairs, the outstanding liabilities of which amount to between 5000*l.* and 6000*l.*

WOLVERHAMPTON, CHESTER, AND BIRKENHEAD RAILWAY.—On Wednesday, the affairs of this company came on for winding-up before Master Brougham, upon petition of five shareholders, which set forth that the undertaking was for a line between Birmingham and Birkenhead, with a proposed capital of 1,000,000*l.*, in 50,000 shares, of 20*l.* each. All the shares were eagerly taken up; but, owing to the general panic of the period, only a small amount of money was paid. The preliminary expenses amounted to 12,000*l.*, and of this a large amount is now outstanding and unpaid; and to liquidate it the petitioners have been called upon at law to pay between 400*l.* and 500*l.* each.—The Master proceeded with the first class of contributories, consisting of 100 provisional committeemen, whose names appeared on the prospectus, and who were declared liable under the Act.

The first distribution which has yet taken place by any of the companies under the "Winding-up Act" is now in course of payment, being a return of 10s. per share to the shareholders of the Tring, Reading, and Basingstoke Railway Company, by Mr. Wryghte, the official manager. The original deposit was 5*l.* 5s. per share, and a further distribution is expected by the recovery of funds which the Master has decided to be due to the company.

RAILWAYS.—A Parliamentary return of the passenger and goods traffic on all the railways of the United Kingdom has just been issued, containing the following comparative statement for the five years ending June 30, 1849:—

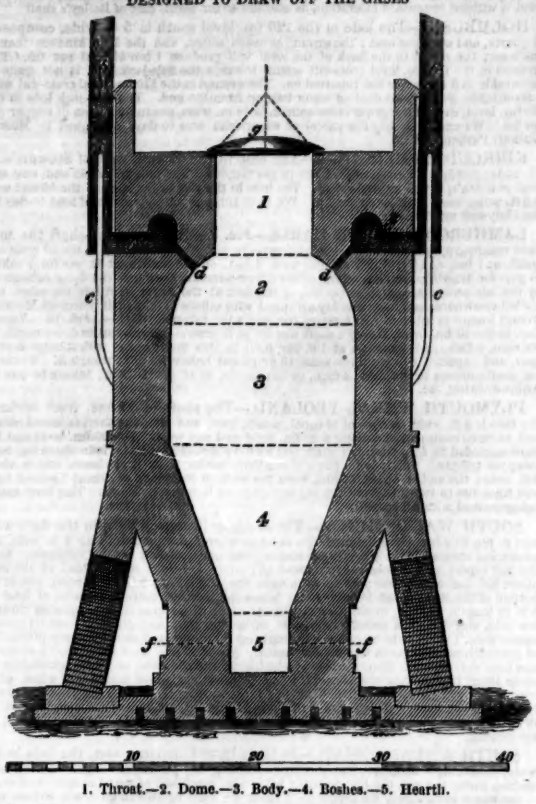
Years.	Passengers.	Receipts.	Goods.
1845	33,791,253	£3,976,341	£2,233,373
1846	43,790,983	4,725,215	2,840,353
1847	51,352,163	5,148,002	3,362,883
1848	57,965,070	5,720,382	4,213,169
1849	60,398,159	6,105,975	5,094,925

RAILWAY ACTS PASSED IN 1849.—It appears, from a return just issued, that the length of new line authorised in the session of 1849, was 16¼ miles; and length of deviations from lines authorised in former sessions 26⅝ miles. The amout of capital authorised to be raised by shares was 3,146,500*l.*, and by loans 764,831*l.*: total, 3,911,331*l.* From this is deducted 586,000*l.*, reduction in capital (of the Irish South-Eastern, the Shrewsbury and Birmingham, and of the East Lothian, dissolved) authorised previously to 1849; and for loans, 169,999*l.*: together, 755,999*l.*—leaving the net amount of additional capital and loans to be raised by Acts passed in 1849, 3,155,332*l.* The decrease on the mileage authorised previously to 1849, by the abandonment of portions of certain lines, was 16¼ miles, and by deviations 7¼ miles: together 23⅝ miles, thus making a total decrease on the mileage authorised previously to 1849, of 6⅝ miles. In addition to the 34 Acts above referred to, there were two Acts passed incorporating companies for railways in India—Great Indian Peninsular, 500,000*l.* capital, and 166,666*l.* loan; and the East Indian Railway, capital, 12,000,000*l.*: together, 12,666,666*l.* From this it would appear that the total additional capital authorised for railway purposes in 1849, was 15,821,998*l.*

IMPROVED METHOD OF MAKING PIG-IRON.

In our last Journal, we gave a short account of the specification of Mr. B. Thompson's new patent for an improved mode of making pig-iron, of which we are now enabled to give a detailed description, with remarks, which has since been furnished us.

SECTION OF A BLAST-FURNACE (CIRCULAR WITHIN AND WITHOUT) DESIGNED TO DRAW OFF THE GASES



1. Throat.—2. Dome.—3. Body.—4. Boshes.—5. Hearth.

This paper is intended to describe a very important improvement, and a great change, in the making of pig-iron, which, it is expected, will materially economise the charge at present attendant on its production. The native oxides of iron are reduced to the metallic state, in the blast-furnace, by the action of fuel and lime, at a high temperature, induced by the agency of oxygen, the mode of supplying which will be briefly explained. It is not meant to describe particularly the operations of the blast-furnace, and the making of pig-iron, but it is deemed expedient to explain so much of it as may help to elucidate the present object. The necessary supply of atmospheric air to the blast-furnace, as at present practised, is effected by means of its compression to a degree of density adequate to its propulsive delivery into a mass of materials rendered very compact by the height of the contents of the furnace. The motive for a forcible injection is simply that of accomplishing its entrance into the hearth, and afterwards its passage upwards; for the issue, in the first instance, is entirely mechanical, whilst the sole purpose of its introduction is a chemical one. Insure but the presence of the air, and its general diffusion through the materials (in ever so easy and quiet a manner), and you effect all that is wanted, provided the requisite quantity be given. The service of a powerful blowing-engine is called for to compress a vast volume of air* to the requisite density, which is commonly a pillar of 2½ lbs. on the square inch, or the equivalent of a column of mercury of 5 inches; not unfrequently more, but seldom a less, pressure. To dispense with this machine, its first cost, and permanent charge, and to remedy other evils attaching to the present system is the design of the invention now under consideration.

The introduction of air into the blast-furnace is proposed to be effected by a mode exactly the reverse of that which is in use—by *indraught* instead of *injection*. This indraught is to be obtained by exhaustion (carried to the required degree of extension), applied at the vents, near the top of the dome (*vide* diagram *d d*), the throat being closed up, and no air allowed to enter but at the tuyères. The power to be applied to produce the degree of approximate vacuum determined upon may be either a powerful drawing chimney, high-pressure steam-jets, the Archimedean screw, the common pump, or any other machine, or device, by which the purpose is likely to be best promoted. When the desired exhaustion is obtained, the gases will necessarily pass upward from every part of the interior of the furnace, and be conveyed through the pipes (*b b*) into the atmosphere (in case the steam-jets are applied), and the indraught of air at the tuyères will follow of necessity also to supply the vacancies in course of creation, with an impulse, and in quantity, answerable to the degree of exhaustion adopted. As regards the induction at the tuyères, it is immaterial whether the air be cold or in a heated state; if the former, it will enter at once from the atmosphere; if the latter, it will first be drawn through the pipes of the heating stoves; for it is impossible but that its flow, however circuitous, or lengthened, its course may be, can fail to be amenable to the natural law of passing to the vacuum, in volume and velocity commensurate to the force of the exhaustion. The high-pressure steam-jets (to which the diagram has been made applicable) offer a very convenient, and probably the readiest, as well as the most important, means applicable for obtaining exhaustion; and certainly, in respect of power, it may be considered as almost unlimited.

To illustrate the force of this very striking power, it is only necessary to refer to the experiments of Mr. Goldsworthy Gurney, carried out at the London Polytechnic, before an assemblage of various persons, high in rank and eminent in science. He proved that a current of air, by a high-pressure steam jet, might be kept up at any rate, or for any length of time, as a constant quantity, or might be increased or diminished at pleasure. To the apparatus which he used he attached a mercurial gauge, and showed by the height of the column the force produced, and the degree of current created, which was indicated by a pillar of 19 in.; the power of the steam applied being omitted to be given. Now, 19 in. of mercury being equivalent to a compression of air of 9½ lbs. on the square inch, is nearly four times greater than the pillar of air usually made use of for blast-furnaces; and at least 10 or 12 times above what is deemed desirable for the indraught.

A state of exhaustion equal to 1½ in. of mercury, or ¾ lb. on the square inch, it is expected, will be found fully adequate to the working of a blast-furnace, and innocuous in respect of the evils imputable to the present system. In comparison with the old practice, this pressure, at first sight, may strike experienced persons as very low; but when the motive for a forcible injection of air, and the various circumstances that bear on this question, are well considered and fairly weighed, there can be little doubt that such impressions must yield to the reasons adduced for the proposed change of system. Among others, which will appear in the course of this description, it may be observed, that the acts of impulsion and indraught, operate so far differently, that one may meet with difficulty in effecting an entry and a passage afterwards, when the other will certainly find none; because its means of entrance and passage, being of a totally different nature, will be infallible, the contrasted causes of which may be illustrated as follows:—There is nothing but resisting matter opposed to the first, constituted of a dense body of unyielding materials, against which the blast impinges before an entry is made between the substances; a certain amount of recoil and consequent diminution of its power, taking place; and next, when effected, in driving forward the gases which occupy the interstices within the furnace, left between the materials, which are naturally disposed to a state of rest. And this, be it remarked, not merely at first when the blast is just applied and they are put in motion, but continuously afterwards; for it is a resistance prevailing through the whole interior of the furnace, to be always overcome by the force of the injected air; to accomplish which, it may readily be conceived, that no very inconsiderable means must be needed. In the other case (the indraught by exhaustion), a certain degree of, or partial approach to, a vacuum, is created through the whole of the vacuities between, and unoccupied by, the materials; the natural and certain flow of air into which cannot fail of taking place. There will be no recoil, because the incoming stream will necessarily be directed, not against, but between the materials, where the exhausting influence exists, and direct to which it will necessarily pass; and so on through the whole of the contents of the furnace, the philosophical grounds of which reasoning are unquestionable. This attraction being equable and unvarying everywhere, and the force of it, as already proposed, equivalent to 1½ inch of mercury, will cause to be commingled with the general contents, whatever amount or volume of air may be found suitable (for the quantity of steam applied to the jets will regulate such requirement), and produce that general uniformity of action which is of so great importance to the process promoted by it. Contrasted with this operation, the blast, upon its reception in the hearth, does not always find a ready passage upwards, and is forced out, at such times, at the stopping (in furnace language, "blowing forward"), which is very troublesome; and here also, its first power is much weakened by the resistance previously alluded to, and is also further gradually impaired as it ascends and enlarges its volume—thus continually varying its action on the materials. Another, and still greater, evil is caused by the sharp current of air, on its entrance into the hearth, striking across the descending metal shortly after it has acquired fluidity; and decarbonating it to a certain extent; which, as it lessens the value of the iron, by lowering its quality, is an occurrence of some importance, none of which mischievous consequences can occur under the other arrangement.

In adverting again to the subject of the steam jets, and their application to the present purpose, it will be requisite to explain the diagram. The furnace represented in section is on a good plan, and is made suitable to drawing off the gases, in accordance with a German invention, patented in this country some years ago; though scarcely brought into use here at all, it has been extensively adopted in France.† In this instance the gases are discharged into the atmosphere, and, consequently, the patentee has no claim. A tunnel, or gallery, *a a*, is constructed in the solid masonry around the throat, to receive the gases through 28 vents, of 8 in. by 4 in. each, placed in a circle below the top of the dome, *d d*. Two elbow exhausting pipes, 18 in. diameter, *b b*, are inserted into the gallery, on opposite sides of the furnace. Two other pipes, *c c*, 4 or 5 in. diameter, are passed up within the larger ones, and extend down to a boiler at the back of the structure, to convey steam to eight jets on the top of each, fitted severally with separate small branches, the orifices of which are proposed to be 1-16th of an inch, each of which eight branches are to be disposed in a circle, or any other manner best adapted to produce the fullest effect in promoting exhaustion in the large pipes.‡ Feb. 1, 1850, the specification (now lodged) takes power; secondly, to place the jets, or other exhausting mover, at the extremity of the floor, or floors, for conveying the gases through the hot-air stoves, engine-boilers, or other furnaces, so as to render them available for heating purposes before they are discharged into the atmosphere.

The situation of two of the tuyères is marked by the letters *f f*, and the number proposed is six, each of which will hold its blow-pipe, whether the air introduced be cold or heated, and fire-clay will be pressed well around them. If the six blow-pipes are each 3¼ in. diameter, they will deliver into the hearth, under the before-mentioned pillar of ¾ lb. on the square inch, the same quantity of air of homogenous density, as the present system of injection with three blow-pipes of 3 in. diameter, and a pillar of 2½ lbs. on the square inch;§ for gaseous fluids, flowing into exhaustion, or impelled propulsively, are governed by the same law, and are alike amenable to whatever degree of force is applied to create the one, or coerce the other. The two steam-pipes are intended to unite, and communicate singly with the boiler, in which single portion a throttle-valve is to be placed, for regulating the quantity of steam to be discharged; and within the boiler, and at the mouth of the steam-pipe, a properly-balanced valve is to be affixed, for the purpose of shutting off and laying on the steam by means of a rod communication, reaching both to the top and bottom of the furnace. To prevent condensation in these exposed pipes (and, indeed, the boiler as well), they should be clothed with some good non-conductor of heat; and as nothing is lost in having a boiler above its required size, it is recommended to make the same of such capacity as would be suitable for a 12 or 14-horse engine. It is a thing of some importance that the furnace should be secured against any inlet of air except at the tuyères; and, for this purpose, the throat must be closed up by an iron lid, *g*, fitted to a metal ring of some substance, with a rib on its inner edge; the face of which, and the corresponding under part of the lid, should be ground, or turned, and truly fitted to each other. No inconvenience from heat can arise here, because the materials in the throat will lie some distance from any heating process. At the bottom of this region (the throat) the fuel may be in a state of mere incandescence; but at the top the materials cannot be other than perfectly cool; so that, were it found necessary, that part of the lid which rests on the ring might be coated with leather, as nothing destructive, beyond the ordinary wear, would be likely to happen to it. The throat is calculated to hold 13 complete charges, each charge of coke being 5 cwts.

The front of the hearth betweeen the tymp and dam plates—should any air find its way in, from casting time until the cinder has risen to the stopping, and sealed the hearth (which is not likely)—an iron plate can be dropped into the opening, and luted with a stiff paste of fire-clay round its edges. But, in fact there is not the least likelihood of such a thing occurring; for, in the present practice, air does not find its way out from the hearth, though the pressure is 2½ lbs. on the square inch, and the exhaustion in the same quarter will be but ¾ lb. There is no other ingress to guard against but the tuyères; and these, as before observed, will be secured with fire-clay round the blow-pipe, as is commonly done when the heated air is injected. The lid may be lifted either by a hand-over-hand pull, or by a light windlass; being so far balanced by a counterpoise weight as to leave only a sufficient preponderence to secure an effectual pressure on its seat. When raised to a suitable height—which may be 3½ or 4 ft.—there should be arranged in readiness not fewer than four complete charges of fuel, ore, and lime, to be put on at one time, that these stoppages (for the jets must be laid off the while) may not occur more frequently than can be helped. If done with dispatch, the whole proceeding ought not to occupy more than four minutes. Each portion of the several series of the four charges should be raked and spread out to a pretty even layer, and the rib of the ring swept round to clear it from any particles lodging upon it; and the lid being lowered to its place, the furnace operations are renewed. It may be proper to observe that the jets, when first applied, drive out the air lying above them in the exhausting pipes, and induce a corresponding rush of their contents from below, followed by the gases within; the removal, or partial extraction of which, will bring in the air at the tuyères. So quick, indeed, is the whole process, as to appear nearly simultaneous.

A lofty chimney might be used; and a very effective and desirable means of exhaustion it would, doubtless, prove—the first cost being the only one. For a single furnace, the expense of such an erection might preclude the entertainment of it, and even for two it might be somewhat questionable; but, for any greater number, there could be no hesitation as to the preference being due to the high chimney. The general practice is to place blast-furnaces against a high bank, for the convenience of supplying the charges. In such cases, it would suit very well to place the chimney there; for, if raised from the floor, some 50 ft. of its height would be a mere dead structure. The exhausting-pipes, in this instance, would have to be curved to the back of the furnace, united there, and then run direct to the chimney, for the purpose of closing the communication therewith; a valve, on the plan of Watt's throttle-valve, might be placed in the single pipe. This would be the only necessary variation from the already described scheme of the steam jets.

The Archimedean screw—another power of great force in the draught of gaseous fluids—might be readily applied by insertion in the single pipe uniting the two separate exhausting ones, to be turned by a belt from a prime mover, placed on the furnace floor—such prime mover being a steam or water-engine, the power of which will not be required to exceed 12 horses. An old furnace may be made adaptable to this scheme by taking some 8 ft. off its top, and building it up again conformably. Old furnaces are generally of pretty large exterior capacity, and would be likely to afford sufficient breadth on the top to give the required charging room; if not, a little overhanging of masonry would meet the requirement. Dust will, by time, collect in the vents. A convenience (not shown in the diagram) is applied for clearing them out once in two or three weeks.

It remains only to offer a few remarks on the pecuniary advantages likely to arise from the adoption of this invention. The steam-engine, as applied to blast-furnaces, realises no more than some 50 per cent. of the power actually given out to it from the boiler; or, in other words, the power of the blast delivered into the furnace is one half only of the steam taken to produce it; 4285 cubic feet of air per minute, compressed to 2½ lbs. on the square inch, which is the quantity assumed to be required in making 120 tons of pig-iron per week, will take the power of a 50-horse engine—to work which 60 tons of coals weekly will be necessary.

The mechanical power for creating an exhaustion of the value of ¾ lb. on the square inch will be 30 per cent. of the power demanded to compress air to 2½ lbs. on the square inch, and, consequently, 18 tons of coals per week will be the proper assignable quantity in this case. This is assuming the waste by the jets to be the same as by the blowing-engine. But a further saving, of no inconsiderable amount, will arise in favour of the jets, by reason of the steam acting at once upon them without the intervention of machinery; contrasted with which the blowing-engine causes a loss of steam-power amounting to one-half. Seventy per cent. has been just shown to be the amount of saving by the exhaustion simply on comparison of the powers actually required in the opposed cases. To this an addition ought to be made for the saving of waste on the co ntrasted applications.

* 360,000 cubic feet of atmospheric air are required to make 1 ton of pig-iron in a coke furnace; therefore, 4285 cubic feet per minute will be needed to make 120 tons per week, which, at the present day, is by no means considered a large production.

† It is most extraordinary and unaccountable, that the value of this discovery should not have been properly appreciated in this country, but has been allowed to lie dormant for some half-score years. Mr. S. B. Rogers, in his *Data for the Use of Blast-Furnace Managers*, published in the *Mining Journal*, some time since, shows that the worth of the carbonic oxide discharged from the top of a blast-furnace, is equivalent to one ton of fuel for every ton of pig-iron made, and can, to that extent, be made available in the hot-air stoves, for the engine-boilers, reverberatory furnaces, and for very many other heating purposes.

‡ Sixteen jets of one-sixteenth of an inch will discharge 495 cubic feet of steam per minate, under a pressure of 50 lbs. on the square inch, which is more than is likely to be required; but the throttle valve will regulate the discharge. In the ventilation of Seaton Delaval Colliery, Mr. Forster used thirty-two jets of one-sixth of an inch, with steam of the same strength; by which means he circulated through the mine 79,359 cubic feet of air per minute; being 50 per cent. more than had been previously accomplished under the old practice of a furnace at the bottom of an up-cast shaft. This was his first and unaided attempt, and, therefore, it may be permitted to remark (apart from all reflection, as in truth he is deserving of the highest praise for singly leading the mining world into a most valuable expedient), that the jets might have been very much more effectively applied, and, consequently, a large portion of the steam saved. His scheme has been published, and much spread abroad.

§ Six pipes of 3¼ inches diameter=70·74 inches area×0·75=53·05 inches.
Three pipes of 3 inches diameter=21·21 inches area×2·5=53·02 inches.

LITERARY NOTICES.

On Copyright in Design in Art and Manufactures. By T. Turner, of the Middle Temple. London: F. Elsworth, Chancery-lane.

This is a volume treating on the laws of copyright in design, and patents for arrangements in arts and mechanical manufactures. The existing laws on these subjects is exceedingly complex and uncertain; and the author has conferred a benefit on inventors and proprietors of right in the registration of designs in having concentrated the details into a comparatively small compass, his concise descriptions of what is, and what is not, patent right, and his interesting history of the subject from the earliest period of its notice in Venice in 1469, and a somewhat similar custom in Germany in 1486. As we have not time at present to do Mr. Turner's work the justice it merits, we, therefore, defer a further consideration of it until our next, when we purpose treating the subject at some length; in the meantime, however, the following extract will give an idea of the style and contents; it is from the section on the "History of the Subject:"—"The earliest mention of anything analogous to copyright is stated to be at Venice in 1469, and that something similar existed in Germany in 1486, in combination with a censorship of the press. There is no trace of it among the elaborate provisions of the civil Roman law. In this country, an Act, passed in 1640, contains, it is said, the first mention of 'owners' of copies of books, though it would seem that the law had indirectly legalised rights, which at first existed only among the members of the Stationers' Company. Patents for invention were already in existence; but the nature of such an invention as would introduce a new manufacture into the realm, could seldom be capable of definition as a form. During the reign of the Stuarts, the fine arts received more or less patronage; and engraving, medalling, and other reproductive arts, began to supply the means of bringing high art into the company of limited fortune. The manufacture of woven fabrics, already extensively developed as one of the useful arts, began in the 17th century to offer a field for the application of printing to decorative purposes. Its first locality was Augsburgh. In 1676, calico printing is said to have reached England, and to have been practised near London in 1690. There was, by authentic records, a print work at Richmond, established by a Frenchman. The first distinct law upon the subject of form is the Act of 1735 for the protection of engraving. Engravings had for some time attained a high rank in public estimation. George I. had knighted the engraver of the cartoons; but line engraving had been most cultivated, and the amount of skill required to imitate a plate must have nearly equalled that of its first production; every stroke of the graver would have to be repeated, so that the pirate could hardly undersell the original; and, from the costliness of this style and its refinement, few could afford to purchase, and few, perhaps, would appreciate. As so much talent had to be spent by the engraver in transferring the forms to a new medium from the canvas to the copper-plate, the value of the right of engraving to the owner of the picture was small; and the picture itself, whether a portrait, or work of imagination, was executed solely as an individual work of art. Gradually, however, it became a practice to publish small prints—not for the profit on them, but to assist in spreading the reputation of the painter; and this was done in the case of portraits of public men. Of course the name of the artist was not omitted; it was attached to the corner to secure, not as now the property in the print, but the fame of the picture. The diffusion of some new mechanic or chemic arts of engraving, or etching, facilitated this. The proprietors of these would not have objected to piracy, which would have spread their reputation more widely—an argument which the opposers of the recent Design Act were willing to apply to calico printing, urging that by printing a house's patterns they showed the superiority of the house's taste—a service which the pirated parties obstinately refused to consider a compensation for pecuniary loss."

Freehold Assurance and the Farmers' Estate Society: a Letter to his Excellency the Earl of Clarendon, K.G., Lord-Lieutenant of Ireland. By William Bridges. London: Trelawney Saunders, Charing-cross.

The above letter is well worthy the perusal of all persons engaged in, or anxious for, the regeneration of Ireland, and the profitable application of those sources of wealth with which she has been so bountifully supplied by Nature, but which have remained unappropriated by man. Mr. Bridges describes freehold assurance to be simply the application of calculation, depending on life contingencies or annuities, for terms certain to commute rents into a series of payments reproducing themselves, and so establishing an ultimate ownership in fee on the part of the tenant cultivator. The Farmers' Estate Society, founded on this principle, through the energies of Sir M. Barrington, by Act of Parliament, having a bill in the present session extending their powers of usefulness, the author takes the opportunity of drawing the attention of the public and the executive of Ireland to the subject, in which he shows the advantages to be derived from carrying out the principle to the shareholder, the tenant, and the labouring population.

The Clinometer.—At the Swansea Royal Institution, Mr. William Price Struvé gave a description of a "clinometer," invented by Mr. Hussey Vivian. After explaining the value of such an instrument to the geologist and miner, he illustrated practically how it was applied to ascertain the dip and plane of a bed of rock, or of a coal-seam, as the case might be. This useful little instrument is 3 in. square by about 1½ in. thick; it contains an excellent magnetic needle, and a card graduated to degrees, also four sights for taking bearings of objects, which will be found useful in mines for ascertaining the bearings of the dip, and strike lines, whatever the inclination of the beds may be. It has also four bubble tubes, a plummet and sector for determining the inclinations of planes by two different methods, and a table for reducing the angles to inches per yard; also two engraved scales for laying down dimensions on paper. Mr. Struvé had used many clinometers, but considered this one the best he had ever tried.

Gigantic Trees.—Extract from a letter, addressed to John Gould, F.R.S., by the Rev. T. J. Ewing, of Hobart Town, Van Diemen's Land:—"Last week, I went with a party of five to measure two of the largest trees that have ever been measured, if not the largest in the world. They were both situated on a tributary rill of the north-west Bay River, at the back of Mount Wellington. One was growing; the other prostrate. The latter measured to the first branch 220 feet; from thence to where the top was broken off and decayed, 64 feet—so that with the top it must have been considerably above 300 feet high; it was 30 feet in diameter at the base, and 12 at the first branch, or 220 from the base; and to this distance must contain as much or more timber than any three of the largest oaks mentioned by Loudon; we estimated it to weigh, with its branches, 440 tons! The standing giant is still growing vigorously, without the slightest signs of decay. It measured, at 3 ft. from the base, 102 ft. in circumference, and at the ground 130 ft.! We had no means of ascertaining its height; but it must have been enormous. These trees are here called "swamp gums;" but I do not know their specific name. Dr. Hooker has lately assigned the appellation of *eucalyptus giganteus* to the stringy bark tree; it would have been a far more appropriate term for the swamp gum, which is a far larger species."

Presents from France to the London Museum of Practical Geology.—The Earl of Carlisle having represented to the Lords of the Treasury that the Minister of Public Works in France, the Ecole Nationale des Mines at Paris, and the Geological Society of France, have made certain contributions to the Museum of Practical Geology, their lordships have advised the proper authorities that these presents are expected to arrive immediately from Boulogne, and directed their free delivery on arrival.

The Screw Propeller.—On Monday last a question of considerable interest, in respect to steam navigation, was argued before the judicial committee, at the Privy Council-office, Whitehall, Lords Brougham, Campbell, and Langdale, Dr. Lushington, and Mr. Pemberton Leigh, being present. An application was made by Sir Frederick Thesiger, on behalf of the patentees of the screw propeller, for an extension of their patent, which expires in May next. The evidence went to prove that no less than 30,000*l.* had been expended in building the *Archimedes*, and in defraying other weighty charges, to establish the screw-propulsion principle; and it further appeared, that although no less than 32 ships-of-war, and 100 mercantile steam-vessels had been constructed already upon this system, not more than two or three had paid for the patent license. These evasions had been occasioned by the conflicting claims of five different patentees; but, as these have now united in one association, it is expected that all who have adopted the use of the screw propeller will have to pay for their licenses. As the Admiralty are interested, either directly or collaterally, in this question, to the amount of about 25,000*l.*, Sir John Jervis, the Attorney-General, assisted by Mr. Crowder, Q.C., opposed the application for an extension of Mr. Frank Petit Smith's patent; but, after examining Capts. Chappell and Crispin, R.N., and Messrs. Brunel and Galloway, engineers, their lordships decided on granting an extension of five years to Mr. Smith's patent upon certain conditions; and there is now, therefore, a fair prospect of that gentleman and his supporters recovering a portion, if not the whole, of the licensing moneys to which they are unquestionably entitled.

Screw Steaming.—The General Screw Steam Shipping Company's new screw steamer, *Propontis*, Captain Brenan, made a trial excursion down the river on Tuesday. She steamed from Blackwall to Gravesend at the rate of 10·78 knots, slack water and a favourable wind—a result, it appears, precisely what, under similar circumstances, would have been achieved by her sister vessels, the *Bosphorus* and *Hellespont*, those ships having made the run at the rate of 9·68 knots. The *Propontis* was built by Messrs. Mare and Co. She is 560 tons, with two engines of 40-horse power; length (both perpendiculars), 175 feet; extreme breadth, 25 feet; depth, 17 feet.

Victoria Docks (opposite Woolwich).—On Monday the standing orders were declared to be complied with by the promoters of this measure for the construction of a dock on the north side of the Thames, the incorporated subscribers being Messrs. E. L. Betts, S. Holditch, T. Hayne, R. W. Kennard, R. Till, J. J. Cummins, and T. W. Harby. Proposed capital 400,000*l.*, in 20,000 shares, of 20*l.* each—power to borrow 133,000*l.* Messrs. Peto, M.P.; E. C. Mangles, Kennard, Till, and Cummins, to be the first directors. Land to be taken not to exceed 200 acres. The rates not to exceed those paid in the port of London. It is understood the Admiralty have directed a survey to be made.

A Lady Cured of Asthma, after Twenty Years' Suffering, by the Use of Holloway's Pills.—The wholesale agent for the sale of Holloway's Pills in New South Wales alludes, in a letter to Professor Holloway, to several extraordinary cures of asthma, effected in that colony by the use of these invaluable pills, and to one case in particular—that of a lady residing near a hill named the Razorback, who, after having for 20 years been afflicted with a great difficulty of breathing, and unable, in consequence, to bear the slightest exertion, at last used this remedy, and is now, to use her own expression, able to run up to the top of that high hill. Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY .....Bank of Australasia—offices, at One.
London, Brighton, and South Coast Railway—London-bridge House Hotel, at One.
Shipowners' Towing Company—offices, at half-past One.

TUESDAY.....London and Blackwall Railway—London Tavern, at Twelve.
East Indian Railway Company—London Tavern, at Twelve for One.
Central American Commercial and Agricultural Company—London Tavern, at Two.

WEDNESDAY ...Mutual Life Assurance Company—London Tavern, at Twelve.
York, Newcastle, and Berwick Railway—London Tavern, at One.

THURSDAY .....Camborne Consols Mining Company—offices, at One.
Copiapo Mining Company—offices, at One.
Brighton Gas-Light and Coke Company—offices, at One.
Lowestoft Railway and Harbour Company—offices, at Twelve.
Northern and Eastern Railway—offices, at One.

FRIDAY .....London and North-Western Railway—Euston Station, at Twelve.
Cornwall Railway—Town Hall, Truro, at Twelve.
Northampton and Banbury Railway—Euston Hotel, at Four.
Oxford, Worcester, and Wolverhampton Railway—London Tavern, One.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

EAST OF SCOTLAND MALLEABLE IRON COMPANY.

The annual general meeting of shareholders in the above company took place on Tuesday, the 5th inst., at the Town-hall, Dunfermline,

JAMES INGLIS, Esq (the chairman of the company), in the chair.

The SECRETARY, having read the advertisement convening the meeting, proceeded to read the minutes of the last general and special general meetings, also the report of the directors for the present. The report reviewed at considerable length the adverse state of the iron trade, from the moment of commencing operations to the present time, and that such a long and severe depression had been without parallel in the history of the trade; but still it was only natural to expect, when the great causes which had contributed to such a state of things were fully and properly viewed. First came the money panic, with its devastating effects upon commercial enterprise, producing a total prostration of railway operations, and thereby withdrawing an important demand for iron, which usually gives to the trade such a valuable impetus; in the rear of this came the "wreck of nations," with its crushing effect upon commercial transactions; confidence, which had long been in a sickly position, thus received another blow, and resulted in a dead, and lifeless, and unpropitious trade, which has told the more fearfully upon the operations of this company, owing to its being a *new house*, and unknown in the market, and labouring under all the disadvantages of obtaining a connection—so that, in addition to the depression in trade, a sacrifice in price has been submitted to, which could not be otherwise avoided. Symptoms of an improvement had now begun to exhibit themselves, and a brighter prospect was now evidently dawning upon the trade; but as the patience of the shareholders had been deprecated so long past, with the hope that with each successive meeting the directors would have been able to have realised their anticipations, and which were still not accomplished, they placed themselves in the hands of the shareholders; and (in the event of no improvement) if they thought it expedient to discontinue operations, the directors would take measures for securing a dissolution of the company in six months hence, according to the deed of co-partnership, and that, in the event of such suggestion being adopted by the meeting, the directors would recommend by all means the continued operations of the works. They had to inform the shareholders that, having obtained very efficient management, their confidence was such, as to assure them that the operations would be conducted with as little loss as possible.

The loss upon the operations, as incurred, were as follows:—

From commencement of works to Dec. 31, 1848	£1284	10	0
" " June 30, 1849	2122	5	10
" " Dec. 31, 1849	1214	5	4—£4621 1 2

J. MACDONALD, Esq., moved the adoption of the report of the directors, which was seconded by Mr. BROWN.

Mr. H. F. CADELL, in a long and somewhat angry speech, condemned the directors for continuing the working operations at such an enormous loss, and taxed them warmly for sacrificing the hard cash of the shareholders in such a reckless and unjustifiable manner; showing that the circumstance of the funds of the company being so crippled, needy sales must follow as a consequence—thus adding to the loss so much the more.

The Rev. Mr. SAWERS followed in a similar strain, and, having made some strange and incoherent remarks, closed an unmeaning speech in a very excited manner.

Mr. WILLIAMSON (a holder of 300 shares) claimed the liberty of making a few remarks, which he did with the utmost sincerity to all parties interested. Allusion had been made by the directors to the efficient management they had been able to obtain; he had been in the habit of going to the works daily, and had had ample opportunities of witnessing the zeal and assiduity of their manager. From calculations of his own, compared with what had been done by Mr. Talbot during the few months he had been in the concern, he had no hesitation in saying that, had he been here at the formation of the works, his impression was that the company would have been saved an outlay of at least 10,000*l.*, and it was unfortunate for the proprietors that he did not come earlier.

Several other shareholders made some few observations, and the meeting resolved to adopt the suggestion of the directors, but left the detail of the procedure entirely for the use of their own discretion.

Thanks were voted to the chairman and directors, and the meeting separated.

THE DISTURBANCES ON LAKE SUPERIOR.—The Indian chiefs arrested and sent to Toronto, on account of their connection with the disturbances at the mining country on Lake Superior, having been shortly liberated, applied to the Government to defray their expenses back to the Saut Ste. Marie, but this having been refused, a voluntary subscription has been set on foot at Toronto, for the purpose of sending them to their homes.

According to the last accounts from the Cape of Good Hope, the inhabitants of the eastern district, in the neighbourhood of Algoa Bay, were congratulating themselves on the discovery of an extensive seam of coal in that direction. At a meeting of the directors of the Eastern Province Mining Association, which had just been held, a resolution was passed to devote a sum to the opening of the coal seam in Coega-ridges to such an extent as may be sufficient to enable competent judges to report more particularly concerning the quantity and quality of the coal in that region, which, in that neighbourhood, is stated to cross over a great extent of country. It has been seen at different points from Zwartkops heights to Sunday's river, a distance of 15 miles, and everywhere within 10 miles of a shipping beach along Algoa Bay. The value of this discovery is materially heightened by the fact, that in the opposite direction from Zwartkops, to the extensive flats towards Port Elizabeth and the Maitland Mines, the country abounds in iron ore. A coal district and iron region lying in such juxta-position, afford the prospect of boundless wealth to the colony, and may become the foundation of the future prosperity of the eastern province of the Cape. The accounts from the Maitland Mines appear to be of the most encouraging character. The party of miners which had lately arrived from Cornwall, and which had not been six weeks in the colony, had already struck the lead lode, as the phrase is, which the captain pronounced to be a lode of great richness as well as breadth. The lead obtained is almost pure, and the returns are already sufficient to cover the expenses of working the whole mines

NEW SOUTH WALES.—We have received advices from Sydney to the 18th August. A private expedition to California was in course of formation by a number of persons, who had secured a first-class schooner of 90 tons to carry them, remain for them, and bring them back. A Sydney manufacturing jeweller and goldsmith announces that he is in hourly expectation of 6 cwts. of gold (about 30,000*l.* worth), consigned to him from San Francisco, per *William Hill*. On the 15th August, six ships and vessels of large burden were on the berth for the gold country—the *Coquette*, the *Cheerful*, the *Margaret*, the *Inchinnan*, the *Courrier de Tahiti*, and the *Chasely*. The latter is advertised to take horses. In Sydney a company was being formed for the purposes of working and smelting the iron ore found on the estate of Major Lockyer (county of Argyle). Small quantities of the ore which had been smelted have yielded from 80 to 90 per cent of malleable iron. Of this tools have been made, which were pronounced superior to similar ones made from the very best English steel. The ore is found in one enormous mass, extending over an area of 50 acres, and there is every facility for smelting as well as for working it.

REMARKS ON THE COPPER MINE IN THE ISLAND OF KAW-AW, ONE OF THE NEW ZEALAND GROUP, BY G. HARRISON, ESQ.—The island of Kaw-aw, New Zealand, is situated 30 miles north of Auckland. Both mine and island are the property of the Bon Accord Company, of Aberdeen. The mine is situated on the surface—the depth of the main lode is 18 ft. below the surface—say 12 ft. below the sea level—about 100 tons weekly can be raised—produce 8 to 14 per cent.; but much inferior ore is also found, containing from 5½ to 7 per cent., and holding 30 per cent. of sulphur. The nature of this ore is to heat when damp. Mr. Taylor, the present manager, has, therefore, raised two large calcining furnaces, in a bay four miles from the mine. By their means a large quantity of the sulphur will be thrown off; while, in consequence of the low per centage of metal, it would not pay to send the ore to England in its present state, owing to expense of freight, &c. Four flowing furnaces are in course of erection, and will be in operation the first week in August; a regulus will thus be obtained by condensing three tons into one, giving, it is presumed, about 30 per cent. on an average. The works are extensive, costly, and well got up, and it is calculated that, when in full operation, 130 tons of 30 per cent. regulus will be obtained monthly. Probably those concerned are far too sanguine both as to per centage of metal and quantity of regulus. There are about 250 souls on the island, which contains 4630 acres, but far too hilly for much available land for agriculture, and too much wooded for pasture. Its mine is, therefore, its only valuable point.—*Southern Cross*, New Zealand.

The Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

HAWKMOOR TIN AND COPPER MINE is in the parish of Calstock. In 256 shares; and held on lease for 21 years (19½ unexpired), at ⅓th dues. The length of the sett on the course of the lodes is 1¼ mile. The money expended by the present adventurers is about 4000*l.* (and by former parties about as much); whilst the ores raised and sold have yielded to the present company 800*l.*; and they have nearly ready for sale 40 tons of copper and 5 tons of tin, valued at 300*l.* The mine is worked by water-power, the wheel being 24 feet by 11 feet breast, and a drawing engine, with crushing mill attached. There are also smiths' and carpenters' shops, sump-house for drying clothes, dressing-floors, &c., &c., preparatory to an extensive mine. The monthly cost is about 150*l.*; persons employed, 30; average returns, 18 tons per month. The sett contains six lodes, all producing rich gossan and ore; but the principal operations are on the middle lode, which answers to the rich Marquis lode in Bedford United. Another lode, 2½ fathoms north of the middle lode, will be seen again in cutting plat in the next level; and another south lode, underlaying north, and distant 38 fathoms, will form a junction with the middle lode between 50 and 60 fathoms deep. The adit level on this middle, or Marquis, lode has been driven about 70 fathoms, showing gossan and ore throughout. The 10 fathom level, on same lode, is extended 80 fms., above which 45 tons of ore have been stoped away and sold—28 tons by a former party and 17 by the present. This main shaft is sunk to the 20 fm. level, and the lode intersected and driven on 17 fathoms west, with good bunches of ore at intervals; and 23 fathoms east, with a good continuous orey lode, worth from 2 to 6 tons per fathom all the way, always best in the bottom, and producing rich tin in places. Below the 20 fathom level the shaft has been sunk on the underlie nearly to the 30, through a good paying lode; and thus the existence of a large quantity of ore ground has been proved.

We have entered more fully into particulars regarding this mine than we usually do; because, belonging principally to private parties, it is seldom brought before the public, though well worthy of attention.

[*To be continued in next week's Mining Journal.*]

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—Field's engine-shaft is sunk 6 fms. 4 ft. 3 in. under the 60 fm. level, lode worth about 30*l.* per fm., ground good for sinking. I expect the present working month it will reach the 70 fm. level; it was set on Saturday last at 16*l.* per fm., for the month. The men in this shaft have worked the whole month without the loss of a single day's work, although it is the month that in most mines the water causes the greatest impediment; the rise and winze, east of said shaft, was communicated last Tuesday, then the 60 fm. level was resumed driving, and the lode in the end is about 4 ft. wide, with a course of copper ore on the south part 18 to 20 in. wide, worth 16*l.* per fm., having the appearance of still greater improvement—this end was set on Saturday last to six men, at 3*l.* 10s. per fm. The lode in the 60 fm. level west is from 3 to 4 ft. wide, containing a small quantity of copper, not of much value. The 50 fm. level east is resumed by four men. The tribute pitch over the 60 fm. level, east of the engine-shaft, was set last Saturday to four men, at 10s. and 5s. in 1*l.* We have given the men a task to raise 10 tons, after which, at 2s. 9d. in 1*l.*

BARRISTOWN.—In the 30 fm. level end west the lode is about 1 ft. wide, with an irregular branch of lead, varying from 6 in. to 1 in. in size, and pretty solid; in the 30 fm. end east the lode is more regular, producing about 7 cwts. of lead per fm.; in the back of this level the lode is producing about the same quantity of lead per fm.; the Slob shaft, sinking under the 30 fm. level, is now progressing well; the lode in the bottom of the adit level, west of the slide, is still poor; in the cross-cut, driving south of Nangle's shaft, the ground is not altogether so hard for driving as heretofore.

BEDFORD UNITED.—The lode in the 103 fathom level, east of the engine-shaft, is 15 in. wide, producing stones of ore; in this level, east of Bailey's winze, we are engaged cutting into the capels of the lode; and in the western level we are driving north to intersect the north part of the lode. In the 90 fm. level east we have not taken down any lode; the lode in Crews's winze, in this level, is still worth 35*l.* per fm. In Bray's winze the lode is 2 ft. wide, producing saving work, and very kindly; the ground is also cased. We continue to drive by the side of the lode in the 70 fm. level east.

CALLINGTON.—In the 125 fm. level cross-cut west the ground is still hard for driving. The lode in the 112 fm. level north will produce 2 cwts. of silver-lead ore per fm.; the lode in the 112 fm. level south is at present disordered by the copper lode, but by driving about 6 ft. further, we expect to meet with the lode again, judging from the level above. The 90 fm. level, south of the count-house shaft, is opening ground of a moderate tribute character. The diagonal shaft, sinking below the 90 fm. level, is now down between 4 and 5 fms. below the level—ground very favourable for sinking. In the 70 fm. level east, on Kelly Bray lode, the lode is about 2 feet wide, composed of capel, spar, and copper ore, producing 1 ton of the latter per fm. In the 112 fm. level north, at the south mine, the lode is about 4 in. wide, producing some rich work for silver-lead ore. Our last parcel of ore, computed 42 tons, sold to Messrs. R. Michell and Son and the Penpoll Smelting Company, realised 17*l.* 17s. per ton.

CARTHEW CONSOLS.—At the upper mine I have set the engine-shaft to sink from the 65 to the 75 fm. level, with all preparatory work, to be completed in three months; the men have commenced operations in good earnest, and in stripping down a piece of lode that stood about the shaft in the 65 fm. level, they have discovered a good branch of lead gone down. The lode in the north end, 65 fm. level, is about 3 ft. wide, looking well, orey throughout. In the south end in this level we have taken down no lode this week, nor shall we for the next, our principal aim here being to get, without delay, under the bunch of lead gone down from Cocking's pitch, in the 48 fm. level. We have done but little this week in clearing the 55 fm. level north, for want of ventilation, and have engaged the men in clearing a winze from this to the 65 fm. level, which I expect will be completed on Monday. In the the 28 fm. level the men have, since my last, been engaged driving east, to intersect a very promising part of the lode, which we observe to be gone off there. An important improvement is witnessed throughout the tribute department, especially in the pitch in the bottom of the 48 fm. level north, which, when set, was supposed to be one of rather inferior quality, but turns out to be of great value. The men have sunk about 10 ft., where I find the lode to be from 3 to 4 ft. wide, very rich, and as easily to be broken as if it had been wheeled there by men: two-thirds of all they raise will go into the market. At the lower mine, though the present end does not show quite as well as two days since, yet we have driven through a very promising piece of ground of late, wherein the lode has yielded good stones of lead.

DYFNGWM.—During the greater part of the month of December, and the early portion of January, the severity of the weather was such as to stop a large portion of our operations; my bi-monthly report will, consequently, be very confined, especially in the old mine, as the frost has stopped the water-wheel for five weeks out of the time. The shaft has, however, been sunk 9 fms. 2 ft. below the 22 fathom level; we shall soon, therefore, be ready to commence driving the 32 fathom level. In the adit level, we have sunk 3 fms., through attle and rubbish, and have about 2 fms. more to sink to the old workings, which I have let to four men to hole, at 15s. per fathom. In the 16 fm. level, we have fixed six stull-pieces to receive the attle from the two stopes above and below, and to secure the ground about this level. In the 22 fm. level west, four men are rising to the steel ore stopes of the 16 fathom level; there are about 3 fms. more to hole, which I have let at 90s. per fm.; the lode is producing about 1 ton per fm. In Davies's stope east, four men are stoping, at 50s. per fathom; the lode is worth 12*l.* to 15*l.* per fathom. Jones's stopes being open, they have been suspended until better weather; these stopes are likely to turn out a large quantity of ore above the adit level. In Castle adit, the lode is from 3 to 4 ft. wide, worth 12*l.* to 15*l.* per fm.; we are sinking under the adit, at 90s. per fathom. The middle adit has been suspended; but we will re-commence working it immediately. The new stamps and machinery, with the washing-floors, are now complete, and we shall immediately commence washing the ore now at surface; we have but little room left on the floors. Our settings for this month are—four men to hole from the adit level, at 15s. per fathom; set the shaft to nine men to sink 2 fms. more, at 18s. per fm.; in Davies's stopes, two men at 50s. per fathom; Tudor's stopes, two men, at 50s. per fm.; and the rise under the steel ore stopes, four men, at 70s. per fm.; Castle adit, six men, at 90s. per fathom. The 10 fathoms of 8-inch pumps are at the brace, prepared to send down, and will be fixed as soon as the shaft is about 1 fm. more down. Having now all our works in good order, we shall be enabled to set many more men to work profitably.

EAST BIRCH TOR (TIN).—I have now forwarded a few stones of tin as a sample of what we are now raising and dressing from No 4 and 5 lodes. They are for the proprietors, to see what the mine will produce. I confidently believe that this mine will not be surpassed by any tin mine in Devon or Cornwall. We sent off tributers' crop tin yesterday morning, which I expect will make a good and remunerating price. We are now dressing the shareholders' tin, which will produce 1 ton more than estimated.

EAST CROWNDALE.—The 28 fm. level west is still poor—ground easy for driving; the same level, east from sump, is also poor; in the same level, east of middle shaft, the lode is tinny, but not rich. We have just commenced sinking the middle shaft below the 28; the lode is 4 ft. wide, producing good stones of tin. Our pitches are looking well. November and December parcel of tin (12 tons) is still at Plymouth, waiting to sell. Since my last report, we have sold 12 tons of tin—10¼ tons at 48*l.* 12s. 6d., and 1¼ ton at 32*l.* 10s. per ton.

EAST WHEAL GEORGE.—In accordance with your instructions, we have suspended operations in driving on the lode, having already gone 20 fms., and the ground here being so shallow, we think it the more prudent course, having ascertained its run and underlay, as also its size. The bottom may be said to carry on throughout, and is 10 to 12 in. high in the end, the size of the lode averaging about 3½ feet. In sinking the winze, as I before informed you, we were stopped from want of power to beat the coming water; but I think we have seen quite sufficient of the lode to the present depth (3 fms.), having given 4 tons per fm. of good produce (I should think full 12 per cent.), which would make a good price at present standard. We have confined our operations during the past week to completing the leat, and are now excavating, so as to get from 2 to 3 ft. further fall, which, according to my levellings, is 50 ft. Mr. English, with Capt. Carpenter, has been down here, and laid out the ground for the wheel-pit, so as to take a 40-ft. wheel, as also the shaft, which we shall now get on with as speedily as possible, and the other surface work.

ESGAIR LLEE.—The deep adit, east of the cross-cut, on the north lode, is for the present suspended; the men that did belong to this level are put to rise against Morgan's winze, sinking under the 12 fm. level, and I think by the end of this week we shall have communication from the shallow adit to the deep adit level; this will be to us a most material advantage, as it will enable us to put several men in to work on ore ground, which could not have been done previous to the communication in the winze sinking to ventilate the end; the lode is of much the same size and character as in the level below—2 ft. wide, unproductive. The caunter lode in the 12 fm. level, east from the surface, is much harder than when last reported, and will yield about 4 cwts. of ore per fm. The caunter lode in the deep adit, east from the base of the hill, is 3 ft. wide, producing some stones of ore, but not sufficient to set a value on. The caunter lode in the stopes over the shallow adit, west of Morgan's winze, is not looking as well as when last reported; the lead does not hold up more than 5 ft. above the back of the level, and we shall at once commence sinking and stoping the bottom of the said level, where I think the lode will prove more productive going down.

HEIGNSTON DOWN CONSOLS.—In the 35 fm. level cross-cut south we have cut a lode, producing some good stones of copper ore, but have not cut the south wall thereof. The 35 fm. level, east of Bailey's shaft, is not so good for copper ore as last reported on, there are, however, sufficient indications to warrant a speedy improvement; the pitch in the back of this level continues to look well, and the men working therein will get fair average wages, at 2s. in 1*l.* for copper ore; the winze sinking below this level is without important alteration, as also the 45 fm. level, east of Bailey's shaft.

HOLMBUSH.—The lode in the 120 fm. level south is 5 ft. wide, composed of quartz, and stones of lead; the ground is much softer, and the lode kindlier than it has been; the stopes in the back of the level will produce 1 ton of lead per fm. The ground in the 130 fm. level cross-cut south, towards the flap-jack lode, is not quite so favourable as it was when last reported on. The ground in the 110 fm. level cross-cut west is favourable, and a great deal of water issuing from the end. The flap-jack lode in the 100 fm. level, east of the great cross-course, is 18 in. wide, producing 1 ton of copper ore per fm. We expect to ship the parcel of silver-lead ores to-day, consigned to Messrs. Walker, Parker, and Co.

KIRKCUDBRIGHTSHIRE.—The lode in the 62 end, west of Stewart's, is ft. wide, yielding 15 cwts. of lead ore to the fathom. The lode in the 62 end, east and west of Keith's, is still unproductive. The lode in the rise in the back of the 50 end west is 3 ft. wide, worth half-a-ton per fm. We have shipped another cargo of lead to-day for the Holywell market.

LAMHEROOE WHEAL MARIA—*Feb.* 9.—At the engine-shaft the men have resumed operations, and set as follows:—To cut through the lode in the 60 cross-cut north, or 1 fm., at 11*l.*; ditto, driving west, 3 fms., or the month, at 7*l.* per fm.; takers to pay for drawing, &c., out of the prices above-named. Owing to the delay occasioned by the late accident, a greater portion of the men at the lower shaft left the mine, and settled elsewhere, and have this day arranged with others to take their places on Monday, when I intend to set, and will forward the prices the following day.——*Feb.* 12.—Yesterday, in the 50 fm. level, Davey's shaft was set as follows:—A cross-cut to drive north, by six men, 2 fms., or the month, at 10*l.* per fm.; in this end we met with a large floor of spar, and expect it will continue some 10 or 12 feet before we get through it. To cross-cut south, driven by six men, 3 fms., or the month, at 8*l.* per fathom; takers to pay for whim-drawing, &c.

PLYMOUTH WHEAL YEOLAND.—The shaft is 30 fms. from surface; the lode is 3 ft. wide, composed of capel, peach, iron, and tin; the shaft is cased down, and we have commenced driving a 30 fm. level east and west. The 20 fm. level east has been extended 26 fms. from the shaft, and we have throughout had a lode which has come away on tribute. The lode in the end is a little harder than it has been, and is about 3 ft. wide; the end is about 60 fms. from the western boundary of Wheal Yeoland East, and from 100 to 120 fms. from the old workings on Roborough Down. The level east is being pushed with all speed.

SOUTH WALES MINES.—The south, or Frongoch lode, in the deep adit, east of the Rhydnet river, is much the same as when last reported, being 9 ft. wide, and producing stones of lead and a little copper, but not sufficient to set a value on. Since my last report we have cleared out most of the old workings on the back of the lode, about 200 fms. east of our present workings; the lode is from 9 to 10 ft. wide, and in the bottom of the sink, which is only 12 ft. below the surface, there is a leader of lead for 6 ft. in length, varying in size from 1 to 3 in. wide, with veins of ore running through the lode, and will yield about 5 to 6 cwts. of ore per fm.; and, judging from its present appearance, I think it to be of a very promising character, and showing every probability of productiveness at no much greater depth. About 20 fms. west I find that a cross-cut has been driven north from the side of the hill by the ancients, and after extending the same about 10 fms. they abandoned it; this cross-course is now within 6 or 8 fms. of the lode which will cut it about 12 fms. below the old workings. I think this cross-cut should be resumed at once, as it will prove the lode 12 fms. deeper, and drain the old workings dry; in fact, I think the lode in the old workings, when properly laid open, would pay for stoping.

SOUTH WHEAL JOSIAH.—In the adit end, driving west, the lode is 4 ft. wide, producing a little ore, and looking promising for an improvement. In the winze sinking under the adit the lode is about 2 ft. wide, composed of mundic, spar, and copper—the water is very easy for sinking. I think we shall be able to go down 10 fms. without any machinery, which will make a good trial on the lode in this part of the mine.

SOUTH WHEAL TRELAWNY.—We are driving cross-cuts, both east and west of the engine-shaft, in the 50 fathom level, with six men in each cross-cut—ground favourable, also composed of a deep blue killas strata; we have also cut through some branches of mundic, with spots of lead in it. We are making preparations to sink the engine-shaft. Things are in a regular course of working order.

TAMAR (SILVER-LEAD).—The engine-shaft is sunk 13 fms. 5 ft. below the 190 fm. level. During the last fortnight we had a breakage in the connection of the main rod in the 55 fm. level, which has impeded our progress in sinking. In the 190 and 175 ends, driving south, there has been no lode taken down since last reported on. The 160 end is still in slidy ground, and unproductive. In the 145 end the lode is 3 feet wide, and opening good profitable ground. We have holed the winze from the 145 to the 160 fm. level, which will facilitate our operations at this point. At the north mine, the sumpmen are engaged fixing a drawing-lift in the 80 fm. level. In the 80 end, driving south, the lode is 2 ft. wide, 6 in. of which is good work. In the 70 end, driving north, the lode is 2 ft. wide, interspersed with ore, and producing work of a moderate quality; in the winze sinking in the bottom of this level the lode is 18 in. wide, composed of capel, can, and ore, saving work. In our tribute department we are looking just the same as we have been for some time past. We sampled on Saturday, the 2d instant, computed 84 tons of rich silver-lead ores, samples of which have been sent to the different smelters.

TINCROFT.—On Highburrow tin lode, in the 152 fm. level, east of engine-shaft, the lode is 6 ft. wide, worth 36*l.* per fm. In the 142 fm. level, east of Martin's east shaft, the lode is 5 ft. wide, worth 18*l.* per fm. In the 132 fm. level, east of Martin's east shaft, the lode is 4 ft. wide, worth 16*l.* per fathom. In the 120 fm. level, west of engine-shaft, no lode has been taken down since last reported, then worth 12*l.* per fathom. At North Tincroft, the engine-shaft is now about 8 fms. below the 100 fm. level, the lode is 5 ft. wide, worth 25*l.* per fm. for copper. In the 100 fm. level east the lode is 4 ft. wide, worth 12*l.* per fm; in the west end, same level, the lode has much improved, now worth 20*l.* per fathom for copper. In the 90 fm. level, east of Willoughby's shaft, the lode is 5 ft. wide, worth 14*l.* per fathom for tin and copper; in the winze sinking below this level the lode is 6 ft. wide, worth 20*l.* per fathom for copper. In the 90 fm. level, west of engine-shaft, the lode is 5 ft. wide, worth 30*l.* per fathom for copper; in the winze sinking below this level the lode is 6 ft. wide, worth 18*l.* per fathom for copper. In the 80 fm. level west the lode is 4 ft. wide, worth 4*l.* per fathom for copper. On Chapple's lode, in the 110 fm. level, driving east of Cook's Kitchen, the lode is 4 ft. wide, worth 5*l.* per fm. for tin. In the 100 fm. level, east of Downright shaft, the lode is 5 ft. wide, worth 8*l.* per fathom for tin and copper; in the west end, same level, the lode is 5 ft. wide, worth 17*l.* per fathom for tin and copper. In the 90 fm. level west the lode is 4 ft. wide, worth 8*l.* per fathom for tin and copper; in the winze sinking below this level the lode is 4 ft. wide, worth 16*l.* per fathom for tin. In the 80 fm. level west the lode is 3 ft. wide, but poor. In the winze sinking below the 70 fm. level the lode is 4 ft. wide, worth 8*l.* per fm. for copper. Palmer's shaft is down to the 100 fm. level; the men are engaged cutting plat, &c.—by the end of this month we shall commence to drive west on the course of the lode. In the 90 fm. level west the lode is 3 ft. wide, worth 5*l.* per fm. for copper. In the 80 fm. level, driving west of Stainsby's shaft, the lode is 2 ft. wide, with spots of ore. In the 24 fm. level, west of shaft, the lode is 1 ft. wide, but poor. We have communicated the winze sinking below this level to the 36 fathom level, and have set a pitch to six men, at 4s. 6d. in 1*l.*

TRELEIGH CONSOLS.—In the 100, west of Garden's, no lode taken down this week. In the 90 fathom level, west of Garden's, the lode is 20 inches wide, with stones of ore. The 80, west of cross-cut, on the north part, lode 15 inches wide, with good stones of ore, and is looking kindly; the 80, west of ditto, on the south part, lode 18 in. wide, poor. The 70, west of Garden's, lode 2 ft. wide, worth 8*l.* per fathom. At Wheal Parent, the engine-shaft below the 40 is sinking in the country. The 40 cross-cut south is driving towards the middle lode; the 40, east of engine-shaft, lode 20 in. wide, worth 3*l.* per fm. The 30, east of ditto, lode 18 in. wide, worth 4*l.* per fm. I expect we shall sample on Tuesday next about 150 tons, 63 tons of which is from the Parent.

TRETHEVY (COPPER).—We are progressing with our operations here as expeditiously as possible, although the unfavourable weather has prevented our accomplishing so much as we could have desired. The new road has been completed from Trethake farm-house to the mine; and I flatter myself we have a first-rate thoroughfare for the engine and other materials that may be required. The stone carriers have been using it for some time, and it is becoming quite firm and compact. We have nearly completed the building of the carpenter's shop, and hope to have it covered in during the current week. We shall also proceed with the smith's shop forthwith. We have timbered and secured the adit plat; and the men are now engaged in strengthening the timbering in the shaft, which we found in a very dilapidated state, so that there shall be no impediment to carrying out the pitwork properly as soon as required. I have carefully examined the adit, driven north from the shaft, and found two very promising lodes, and well defined, composed of rich-looking gossan, quartz, can, &c., both underlaying towards the shaft; and am well informed there is another underlaying in the same direction that passes just underneath the counting-house, and represented as being the best in the sett. The south one of these is about 20 fms. north from the present bottom of the shaft, and will come into the shaft about 40 fms. deeper, supposing you have a "downright" shaft, which, for many reasons, I would strongly recommend; the next is about 8 fms. further north, and partakes of all the characteristics of the former, and will meet the shaft at a further depth of 16 fms., so you will perceive that, by a sinking of 20 fms., a 20 fms. of cross-cut will show you in that level the value of the north, or what I shall, for the present, call the middle lodes; we shall then have about 8 fms. to drive south to cut the present lode in the shaft, and to drive about 16 or 17 fms. further south to cut the lode, now about 7 fms. south of the shaft, and which was the first that induced any operations here. From this latter lode the most splendid specimens of copper, blende, and lead, have been produced, possessing, at the same time, all those properties that, as a miner, I most highly approve of; the lode averages from 2 to 3 ft. wide. The present state of our operations have not yet permitted me to make that thorough inspection of the underground workings I could have desired; but I have been informed by one of the late shaftmen, whom I well know to be an upright fellow, that would not attempt to deceive me, that the present bottom of the shaft exhibits one of the most promising lodes he ever beheld, containing a large portion of copper, and which had improved in every foot they sunk after meeting with it. We have many other promising lodes in the sett; one, in particular, about 20 fms. north from the counting-house, on which an adit has been driven from 80 to 90 fms.; it is a regular, compact, and well-defined lode, composed principally of first character gossan, spar, peach, and occasional spots of copper ore. This lode having been seen only at 5 fms. from the surface, I consider that much may be expected therefrom. I would recommend that, as soon as we get 20 fms. deeper, a cross-cut should be driven to intersect this lode, which I feel quite confident would be a first-rate speculation. There are other lodes on the sett further north that will come within our operations in due course. I wish you to understand that the ground in this mine can be worked at a comparatively small price; in fact, is exceedingly favourable. The engine-shaft has been sunk to its present depth, at an average price of about 12*l.* per fathom, and I feel satisfied it will not much exceed this as we go deeper. The 30 fathom level has been driven west on the course of the lode about 16 fathoms, at from 30s. to 40s. per fathom. The advantage of this cheap ground will be perfectly obvious to you, inasmuch as small branches of ore would pay on tribute here, which, in hard ground, would be entirely discarded, more particularly as the ore is of rich quality. In conclusion, I feel I can safely congratulate you on the possession of a first-rate mine, and I am perfectly satisfied that no very great outlay will be required to prove her capabilities of giving good dividends to the fortunate shareholders.

TREVILLE (SILVER-LEAD MINE, LLWANICK).—In reporting to you on the future prospects of this adventure, I would beg to say that a more promising mine is not in the county; in fact, every feature in the different lodes shows plainly that there is vast mineral wealth at no very considerable distance from the present point of operation,

which is for the present confined to the adit now driving on the course of the lode, which runs nearly north and south, and varies in width from 8 to 12 ft., and is composed of gossan, flookan, prian, mundic, and quartz, all, more or less, interspersed with silver-lead and spots of rich copper; and I hope, on cutting the junction of the caunter (where we found the stones of silver-lead in shoding) with this lode, to be able to show you a good course of silver-lead. I have also opened on five distinct courses of flookan and prian, running at right angles to our main lode, which will, no doubt, tend very much to enhance the value of the mine, as at every junction of the lodes we may reasonably expect large deposits of ore. The stratum, at all points where I have seen it, is unprecedented for its congeneality to lead. The mine has recently been inspected by Captain James Richards, of Hawkmoor, who reports that of all the lodes he ever inspected, he never in his life saw a finer one, the Wheal Maria not excepted, and would recommend that we extend on it with all possible speed. I am happy to inform you, that the stones of ore taken from the caunter produced from 10½ to 12½ in 20 for lead, and from 33 to 33¾ ozs. of silver to the ton of ore. This lode is about 2 ft. wide, and promises much riches when in settled ground. From the features presented by the different lodes and strata I should confidently say we shall have a first-rate mine.

WELLINGTON.—The engine-shaft is sunk 1 fm. 4 ft. under the 42 fm. level, and will, in two or three days from this time, prepare to fix the lift in this level—therefore, the shaft cannot be sunk deeper until this work is completed; the 42 fathom level is driven east of the engine-shaft 10 fms.; and the lode in the present end is 3 ft. wide, producing some copper ore; this level is yet 5 fms. from the winze sinking under the 32 fm. level, where the lode is about 2 ft. wide, worth 15*l.* per fm. The lode in the 32 fm. level, east of Parcoily shaft, is from 18 to 20 in. wide, worth 8*l.* per fathom. The lode in the 22 fathom level, east of the said shaft, is 18 in. wide; this level for the last month has been poor; but at this time it has a more favourable appearance; there is no change in the north lode since the last report. The cross-cut, north of the new shaft, in the adit level, is progressing favourably; we cannot drive the adit level west, on the south lode, until dry weather sets in, as the water is 12 fms. over this level in the old mine. Our tribute pitches, on the whole, are looking better than for the last two months.

WEST WHEAL JEWEL.—The 85 fathom level, west of Williams's cross-course, on Wheal Jewel lode, not taken down in the past week. The 70 fm. level, west of ditto cross-course, on same lode, not taken down in the past week, when last reported worth 10*l.* per fm. The 57 fm. level, west of ditto cross-course, on same lode, is producing stones of ore. No lode taken down in either of the ends on Tolcarne tin lode in the past week. The tutwork stope, in the bottom of the shallow adit, on Tolcarne tin lode, worth 8*l.* per fm. The stopes in the back of the 12 fm. level, west of Pryor's winze, on same lode, worth 18*l.* per fm.; the stopes east of Pryor's winze, on same lode, worth 14*l.* per fm.; the stopes in the bottom of the 12 fm. level, east of Tregoning's shaft, on same lode, worth 26*l.* per fm.; the stopes in the bottom of the same level, west of Tregoning's winze, on same lode, worth 24*l.* per fm.

WHEAL GROOSE (SILVER AND LEAD).—By request, Captain W. H. Stephens, of Carthew Consols, has inspected this mine, which is situated in the parish of St. Kew, the extent of which (he reports) ranges about 600 fms. on the course of the lode, on which an adit level has been driven from 60 to 70 fms., wherein I find it to be of great promise throughout, and in many places producing good work in silver-lead ore and copper. About 40 fms. from the opening of the adit level, an adit shaft is sunk about 5 fms., wherein the lode is shown very strong and highly mineralised. About 6 ft. south of this shaft a winze is sunk about 3 ft. below the adit level, which, from the plentitude of water, it has been found impracticable to sink deeper, but the advantage of this little additional depth, shows the lode yet more strongly impregnated with mineral. About 14 fms. north of the shaft a cross-course has been met with, which heaved the lode a little to the west, but at the point of intersection it again holds out greater promise than either part noticed, the lode being 3 ft. 6 in. wide, with real good work throughout. The beautiful and easy strata of ground in which this lode is imbedded, and its easy underlay, which is only from 3 to 6 in. in the fathom, enables this mine to be worked with easy expense, as all shafts may be practically sunk on the course of the lode, thereby avoiding those often very expensive and tedious cross-cuts which are generally met with in mines, where the underlay of the lode is greater. About 50 fms. to the west of the present workings another lode is opened, and though there has been but little done, yet enough has been done on it to show that it is of great importance to the mine. The mine is situated about two miles from the shipping town of Wadebridge, and is bounded on the south part by a branch of the River Camel; the land carriage of timber, coal, and all other materials, could thereby be rendered very trifling. As this mine is certainly a very good adventure, I would recommend that a 40 or 45-inch cylinder double-acting steam-engine be erected, for as soon as sinking is commenced, considerable work in lead and copper (it may be calculated) will be raised, when a stamps will be indispensable, and a double-acting engine will, at the same time, serve as a stamps and a pumping engine. From an assay that has been made of the lead ore, it is found to be very rich, producing for lead 13¾, and 83 ozs. of silver to the ton. She is contiguous to Tregorden Mine, and on the same lodes.

WHEAL PENHALE.—In a few days more we shall have all things complete for the commencement of a new lift below the 30 fm. level.; the lode in the nort end in this level continues its immense size; in driving the ends we carry from 4 to 5 ft. of it, which is yielding good work, principally lead; in the south end, in this level, the lode looks very well, and a large quantity of work (lead and copper) is getting therefrom In the winze, in the bottom of the 20 fm. level north (which is about 10 fms. ahead of the north end of the 30 fm. level), we have a very good lode indeed, about 3 feet wide, all of which is very good work in lead; this winze is yet a stronger conviction of the great value of the 30 fm. level and its backs. The lode in the 10 fathom level end south is in a disordered state, about 1½ ft. wide; a great quantity of water continues to issue from it, and good stones of lead and copper are found in it.

FOREIGN MINES.

ALTEN MINES.—Estimated produce for December:—

Mines.	Tons of Ore.	Per Cent.	Fine Copper.
Raipas	58	8½	4·93
Old Mine	45	6	2·70
United Mines	16	6	0·96
Michell's	18	7	1·26
Carl Johan's	4	9	0·36
Mancur's	1½	6	0·09
Total	142½		10·30

Mining Report from the 24th December to the 7th January.

Raipas.—The following is Capt. Monk's report:—With this opportunity I forward you the summary of ores broken at Raipas in Dec., which will be found to be rather small; this is solely owing to the Christmas holidays, and the severity of the weather during the latter part of the month. In Monk's shaft we have cut through the small branch of ore mentioned in my last, and are now sinking in the jaspery slate, which extends over the whole of the bottom of the shaft; the ground, however, still continues speedy and favourable for sinking. In the northern cross-cut the lode, within the last few days, has much increased in size—so much so, that we are leaving reserves in every part of the level, and it is impossible for me, at this present time, to give you an exact idea as to how large it is; the ground is also speedy and favourable for driving, as well as wearing a much more favourable appearance, whilst the quality of the ore has improved since you saw it last. The stopes west of Monk's shaft continues the same as for some time past; at the present time there is no change which calls for further remark.

United Mines.—The lode in the sink now yields remunerative returns, and the prospects continue good. A little improvement is visible in the level easterly, and the lode in this part has latterly yielded a small quantity of ore. The tributers still produce some ore from the old 80 fm. workings, but I fear the dangerous nature of the ground in this part of the mine will compel us to suspend further operations. At Woodfall's the tributers continue to return some small parcels of ore of a good quality.

Old Mine.—The tribute pitches in the eastern part of the mine have somewhat improved. In Slungi's sink the ground is rather harder, and the tributers are not making such favourable progress as heretofore, but the returns are still remunerative. The new sink in the north-east continues very promising, and yields ore of a better quality, but the tribute returns are less than we might expect, in consequence of the compact nature of the lode. The level on the main lode, north-east of Bergmester's, is poor, and making very slow progress, but in the adit level the ground is easier for driving. The general prospects of this mine have not deteriorated.

Mancur's.—No change is to be noted in the sink since my last report; good patches of ore are occasionally to be found, but the ground is very hard, and, in consequence, the tributers make but small returns.

Michell's.—The lode in the sink is somewhat larger, and the prospects are rather more promising, whilst the ground continues favourable for sinking, and the appearance of the lode is again improved. The stopes on Nellin's lode are rather deteriorated, and the tributers' returns have experienced a reduction.

Carl Johan's.—The tributers continue to make some fair returns, but these, from the hard nature of the ground, are less than we had anticipated; the prospects, however, continue promising and good. From the above estimate, it will be observed that a falling off has taken place in this month's produce; this circumstance must not be attributed to any deterioration of the lode, since it solely arises from local circumstances attending this severe arctic climate, which, combined with the absence of daylight, and severe weather, together with the Christmas holidays intervening, have tended, as on all former years, to cause a reduction in the returns at this most ungenial season of the year.

IMPERIAL BRAZILIAN MINES.—The following is the gold report:—

Gongo—from 4th to 12th December	*Lbs.*	2	2	13	0
Bananal—from ditto to ditto		4	11	17	0
Total	*Lbs.*	7	2	10	0

LINARES MINES.—The following has been received from Mr. H. Thomas:

Linares, Feb. 2.—We have seen more of the western ground in the 30 fm. level since my last, and find some excellent arches remaining in the lode, which will be broken at a low rate when the San Juan shaft is sunk to that level. We have now put some men to cut a plat in the 17 fm. level, in order to sink this shaft with all dispatch; the men have finished the plat in the eastern shaft, and are now cutting down this shaft to the 17-fm. level, preparatory also to sinking to the 30. We purpose calling this shaft in future Shaw's shaft. We have reset one of the tribute pitches to four men, at 2 reals the arroba (34s. per ton); this has improved considerably since the first taking, and two other pitches at 2½ reals the arroba—say, 42s. per ton—four men in each; there is also one, the time of which does not expire until the end of February, at 3 reals per arroba. We have also thought it best to set to the Englishman, Thomas Faull, a bargain at 20s. per ton, we paying the dressing cost only for two months; we have had two reasons for setting this ground—first, that it will be far more profitable to the company than if worked by Spanish tributers, who do not know so well how to timber the ground, and do not save their ore so clean; and, second, because it will be giving the men a good lesson in the Cornish way of working, for future operations.

Report from Capt. Curry, on Pozocancho Mine.

Feb. 2.—The 30 fm. level, east of the engine-shaft, has been cleared to the end or forebreast, which we find to be about 80 fms. in length from the shaft; about 40 fms. behind the end the north and south lodes have formed a junction, and found together in the present forebreast; the lode seems to have been very productive to within 4 or 5 fms. of the end, as the former workings were continued in some places from the back of this level to the bottom of the 17 fm. There are some very good arches standing, and which will be all taken away at a moderate tribute; the lode is from 2 to 3 ft. wide in the end, with a very promising appearance, but unproductive of lead; we have not yet reached the end of this level west; about 70 fms. from the engine-shaft has been examined, and we find excellent ground left standing, which must have been in course of working by the last owners, when they were overpowered by the water; this will well pay tribute to take away, at 20s. per ton on an average. On careful examination, we have found that two of the old men's shafts can be made available, one east, and the other west, of the engine-shaft; these, with the Calavera and engine-shafts, will give us command of 200 fms. on the range of the lode. A plat has been cut at our eastern, or Shaw's, shaft in the 17 fm. level, and the men are now employed in cutting down some ground to straighten it, which will be completed in two or three days from this, when we shall commence sinking it to the 30. A plat is in course of opening at our western shaft (San Juan) in the 17, and will be completed at the end of next week, when this will be set to sink to the 30 fm. level also. I am happy in being able to inform you, that our tribute department is looking exceedingly well; one pitch has been set to one of our Englishmen and four Spanish labourers, for two months, at a tribute of 20s. per ton, he to pay all costs, his English pay included, except dressing, and should the lode continue as productive, we have no doubt of his raising 40 tons; this is to the west of the engine-shaft on the south lode. Two pitches have been set to Spanish miners for one month, east of the engine-shaft, on the south lode, one at 43s., the other at 54s., per ton; both are looking well. There are two set on the north lode, west of engine-shaft, for two months, to Spanish miners, one at 36s., the other at 45s. per ton; both looking exceedingly well. We have commenced arranging the pitwork for drawing the water to the next level, and the men are under an agreement to complete it by Saturday next, Feb. 9. Our dressing-floors have been so far completed, that we have commenced dressing; about 25 tons have been dressed and weighed; we have 10 tons more at surface, and about 6 tons broken underground—say, a total of 41 tons. I have to remark, that when we shall have reached the next level, and our new shafts have been sunk to the 30, we have not the least doubt but that our raisings will be very considerable.

ST. JOHN DEL REY MINES.—*Morro Velho, Dec. 8.*—Produce for Nov., 21,427 oits. = 205·82 lbs., from 5259 tons of ore (according to the report from the reduction officer) = 4·07 oits. per ton. The stamps working during the month average 94·7 heads. The supply of stone, though not so abundant as the preceding month, has, nevertheless, been quite sufficient for the supply of the stamps, enabling us besides to reject upwards of 100 tons; but from causes detailed in the mine report, the quantity of killas has been much larger than its usual proportion, thereby greatly deteriorating the standard of the ore, and fully accounting for the falling off in the month's produce of gold.

Cost for November, Rs. 38,385 711, at 26d.	£4158	9	0
Produce, 21,427 oits.; less 5 per cent. duty, 1071 oits. —20,356 oits., at 7s. 7¼d.	7771	6	6
Profit	£3612	17	6

New Stamps.—After a further consultation with John Rouse and Captain Treloar, and maturely investigating the water-power we can safely count on, it has been determined to limit these stamps to 24 heads, to be moved by a 42-feet wheel, reserving the power, should further stamping force be hereafter required, to obtain it by making additions to the Herring or the Susanna stamping-mills. Carpenters are now engaged under John Rouse's directions, in preparing the model of the exterior water-wheel, so as to enable him to take the exact patterns of the pinion-wheels, which are to be obtained from the Rio Foundry, and a force of labourers (which will be increased as opportunities offer) has already been put to clear the ground.

New Hauling Machine.—In driving the lobby to the wheel-pit, the labourers have advanced about 8 fms., being rather better than one-third of the required distance.

Bahu Lode.—In the last mine report, paragraph seven, as well as in the present paragraph, four, you will perceive that Capt. Treloar is somewhat at a loss about this lode, which seems to be shortening in its regular onward course, while it is enlarging on the flank, where it is supposed it may run into Mitchell's lode. He thinks it not impossible that the main body of the Bahu may diverge into what has hitherto been called Mitchell's lode, and that then wheeling round in a gentle curve, it may run into the eastern of the middle Cachoeira. A considerable time must necessarily elapse before the correctness of this theory can be ascertained; but, should it ultimately prove to be well founded, it will lead to an important alteration in the plan of working these mines, since in such case it would become requisite to strain every nerve to work down the Cachoeira sump as rapidly as possible, in order to make it the main sump of both mines, and thus do away with the Bahu sump; meanwhile, Capt. Treloar has his attention anxiously fixed on these points.

Exploration.—Capt. Treloar having observed tracings of a lode budding out in the bottom of a valley, at the rear of Salvador-Hill, which he thinks may indicate a continuation of the main Cachoeira lode in that direction (at a distance from the East Cachoeira lode, which he thinks may be only a branch curved off, in consequence of a hollow in the mountain), has called on his under-captains to examine the locality, and report their opinion upon it; the result shall be communicated in my next, but will probably be that a small exploring party will promptly set to work in that place.

West Quebra Panella.—The lode on this exploration has, as you are already aware, been for some time in a very disordered state; but I am glad to inform you it has greatly improved in appearance within the last few days.

COMBLAWN MINING COMPANY.

A special general meeting of adventurers was held at the offices, King-street, Cheapside, on Thursday, the 14th instant.

HENRY MUGGERIDGE, Esq., in the chair.

The balance-sheet of the mine, showing assets of 237*l.* 14s. 4d., and no debts, was read by the SECRETARY and passed, subject to the usual audit.—Mr. J. W. Lay was chosen an auditor, and the appointment of Mr. G. B. Wright as co-auditor confirmed.—Mr. Loam's proposals for flat-rods were adopted, in order to work both shafts at once, and an estimate of the expenses required forthwith.—The secretary was requested to inform Mr. Loam that the committee expected the engine would have been on the mine before this, and more progress made in the works attending its erection. It was resolved, that 2*l.* 2s. be allowed to Capt. Tabb, of Lamberooe Mine, for inspection of Comblawn, and in full of all demands on this account.—Mr. John Sergeant's terms for a road-way through his land to the mine, of 2*l.* 2s. rent per annum, were acceeded to, and also to a fine of 1*l.* for cutting down four trees.

A call of 2*l.* per share was made—of which 10s. per share, payable in 14 days, and the remaining 30s. per share as wanted, at the discretion of the committee. The balance-sheet showed—Calls received, 2211*l.* 10s.; expenditure at the mine to the end of December, and in London to the end of January, 1973*l.* 15s. 8d.; the balance being assets, 237*l.* 14s 4d. The mine has no debts.

EAST BIRCH TOR TIN MINING COMPANY.

At the first annual general meeting of shareholders, held at the offices of the company, Winchester-buildings, London, on Tuesday, the 12th inst.,

W. P. GALE, Esq., in the chair.

The SECRETARY produced a statement of assets and liabilities, which showed a balance in favour of the mine of 42*l.*

The following report of the state and prospects of the mine was read:—

Your directors have to report, in addition to the statement of assets and liabilities just read, that the sum of 500*l.* is required to be paid to the original committee, as the terms upon which they resign over the mine, and the 1100 reserved shares of the 2500; but it will be borne in mind by the shareholders, that for this comparatively trifling sum they become entitled to complete and excellent apparatus, wheels, pumps, stamps, workshops, materials, counting-house, &c.—so that the capital will be applied to sinking, driving, and laying open ground for tribute; and no mean feature in favour of the mine is that, during the meagre operations which have been carried on whilst the complete registration of the deed was being accomplished, the men have raised nearly enough tin to pay the expenses of the mine, and from what might have been, comparatively speaking, considered unproductive ground; so that it is fair to estimate the amount required for fully developing the mine, and paying the consideration money to the original committee at 1500*l.* Your directors propose to issue 500 of the reserved shares to cover this amount.

Your directors are persuaded, from the opinions of practical men, that this undertaking may be most safely recommended as an investment, warranting, upon the outlay above-mentioned, an ample remuneration; and, in consequence of the incorporation under the Joint-stock Companies' Act, it is relieved from the uncertain operation of the Cost-book System, and every shareholder is aware of the extent of his liability. By this arrangement the shareholders have the management in their own hands, in the annual election of directors, with the advantage of ensuring an accurate and impartial audit of accounts. Your directors would have it recollected that the mine contains ten distinct lodes in secondary granite, which is very congenial for metalliferous deposits. The sett is very extensive, and has ample water-power for all purposes. There are several champion lodes passing through the sett, nearly all of which have been intersected by the cross-cut adit. The backs, laid open by the extension of the levels on the course of the lodes, will work at a moderate tribute; and coupling this with the fact that large quantities of ore have been raised at a shallow depth by the older tinners, and that the produce increases in quantity and value as the sinking progresses, it is obvious that a small capital, judiciously laid out by a nexperienced miner, will effect a continuous and satisfactory return to the shareholders. Besides, it is a well-known fact, that Birch Tor or Vitifer Mine, on the same lode, has returned a profit of 100,000*l.* worth of tin. Capt. Browning has recently discovered some rich working to the west of No. 4 lode, and also to the east, near the footway shaft. He has also opened upon No. 5 lode, the produce from which excels any previously produced.

It was moved by the CHAIRMAN, and carried unanimously, that the statement of assets and liabilities, and the report of the state and prospects of the mine be deemed sufficiently encouraging to prosecute the operations with vigour.

The following shareholders were elected directors for the year ensuing—James Baker, Esq., Thomas Heathcock, Esq., M.D., Joseph Walter Gale, Esq., John Sampson Pierce, Esq., Mr. Nicholas Taperell; James Baker, Esq., was elected chairman for the ensuing year; Robert H. Pierce, Esq., was re-elected auditor for the shareholders, and R. A. Ranger, Esq., was elected auditor for the directors; Mr. T. A. Readwin was appointed secretary.

It was resolved, that the guaranteed dividend of 2s. per share be paid to the new shareholders up to this date, out of the produce of ore now about to be sold; also, that, in order to extend the levels and lay open the ground for tributes, as well as to drive and intersect the great champion lode, No. 1, which has proved so productive in the adjoining mine, the outlay be immediately limited to such operations as are absolutely requisite, until 400 of the reserved shares are allotted, and the money placed at the bankers, to the credit of the trustees of the company.

The thanks of the shareholders were passed to the secretary for his gratuitous and valuable services; also to the chairman, for his efficient conduct in the chair.

[Since the meeting, specimens have been received at the office from the mine, exceeding in richness by far all that has been before discovered. At the conclusion of the meeting, upwards of 200 of the reserved shares were taken up.]

KINGSETT AND BEDFORD MINING COMPANY.

At a general meeting of shareholders, held at the Half Moon Inn, Exeter, on the 4th inst., Capt. FULFORD, R.N., in the chair,

A resolution was passed, empowering the committee to make a call of 5s. per share within a month, and if necessary, a further call of 5s. before the next general meeting. A statement of accounts was presented, showing—Mine cost, Oct. and Nov., 211*l.* 16s. 4d.; law expenses, 15*l.* 4s. 8d.; a moiety for wheel, crusher, &c., 94*l.*; sundries, 5*l.* 10s.=326*l.* 11s. 6d.—Balance of last account, 56*l.* 12s. 10d.; arrears then due, 59*l.*; call of 5s. per share, 150*l.*; arrears still due, 18*l.*; received on account of calls due 1st. inst., 38*l.* 5s.: leaving a balance of 40*l.* 13s. 8d. The liabilities of the company are represented at 706*l.* 13s. 2d, from which there are calls due to the 1st. inst., 129*l.* 15s., leaving a debt of 576*l.* 18s. 2d.

The following report, from Capt. John Spargo, was read to the meeting:—

Feb. 4.—I was underground in this mine to-day, it being our setting day, and am much pleased to see the improvement in the lode south of the rise; it is now 3 ft. wide, with a large stream of water penetrating through the fissures of the lode. I think it is almost certain that we are now within 4 fms. of a course of lead; such indications I have not seen since I have been in the mine. The lode at present produces some good stones of lead. We have had a horse of clay-slate, or killas, which divided the lode, but it is now nearly worn out. Since the last meeting, we have cut a lode about 60 fms. north of Carpenter's shaft, which produces some rich stones of lead—a very promising lode; it underlays east about 9 inches in a fm., and within three fms. to the point and bearing of the lode we are now driving on south of the rise; if it is the same lode, it must have changed its underlay, and been thrown a small distance by the slide; this we shall better ascertain when we cut it due east from Carpenter's shaft, which we shall do in about a fortnight; and if we find this lode as good for lead as it is where we have cut it, I should strongly recommend four men to rise on the course of the lode in each cross-cut, and there is not a doubt in my mind but we should soon get up a course of lead equal to any we have hitherto discovered. I am happy to find that the committee have purchased stamps, crusher, wheel, &c.; when these are erected, we shall be enabled to go to market with our ore. Our new rise is also looking better, although not up to the point where we expect much lead. The ground is still hard, and we expect it will continue so for a fathom or two.

MINERAL COURT MINING COMPANY.

At a special meeting of adventurers, held at the mine, on Friday, the 8th inst., Capt. DALE reported that the 20 fm. level was now extended 33 fms.; that the lode in its western end was now above 7 ft. wide, and for 4 ft. contained tin work worth 15*l.* per fm., and was now driving for 4*l.* 10s. per fm.; and that the lode in its eastern end was 6 ft. wide, and for 3 ft. contained good tin work, worth 10*l.* per fm., and was now driving at 4*l.* 10s. per fm. That the lode in the back of the 20 fm. level, for its whole length, would set at a fair average of 8s., and that the first pitch set in that back was now set at 5s. 6d. tribute. That there was a fair branch of tin in the 8 fm. level end, which end was fast approaching the tin which had been discovered near the adit end, and that the backs of this level would also set on tribute. That the lode in the adit end had been broken into at 13 fms. deep in the new adit shaft, and contained very rich stones of tin, similar to what was found in the adit end beneath it. That owing to the deficiency of water, even at this season, for the stamps, and to a portion of that water being now required for the use of the adjacent clay-works, which have again gone to work, it was impossible to stamp more than three tons of tin monthly with the present power. That to attach stamp-heads to the great water-wheel would be a temporary but ineffectual relief, because it would take some months to get the wheel to work, and in four months the supply of water to this wheel would also fail, when recourse must be had to steam power. That it was, therefore, in his judgment absolutely requisite to procure a proper steam-stamps for stamping the tin ore, and that Capt. Evans (who has been consulted on this subject) had fully concurred, and advised that, "the sooner you erect steam-stamps the better." That 55*l.* 5s. per ton was obtained on Saturday last for the tin sold on that day, the price of the previous parcel sold having been only 48*l.* 10s. That the discoveries and prospects of the mine fully justified the proposed use of steam-stamps, which would enable him very greatly to increase the monthly returns of tin, and that the mine was already a valuable one, and with further development, and the aid of proper machinery, would soon take its place amongst the great and profitable tin mines of the county.

The meeting resolved on adopting Capt. Dale's recommendations, and authorised the purser to procure a suitable steam-stamps, to be erected at the mine, to stamp the tin ore with as little delay as possible.

PENZANCE CONSOLS MINING COMPANY.

A general meeting of shareholders was held at St. Just, on Monday, the 11th inst., when the accounts for the four months ending December were examined and passed, showing—

Balance in favour of adventurers last account	£ 47	15	2	
Amount of tin sold (14 tons 4 cwts. 2 qrs. 25 lbs.)	699	8	3—	£747 3 5
Labour cost, including carriage for four months, ending Dec.	448	3	1	
Merchants' bills, and lords' and bounders' dues, to end of Jan.	172	9	5	
Stamping and dressing	20	19	4—	641 11 10
Leaving balance in favour of adventurers				£105 11 7

The following report, from Capts. J. Carthew and S. Trezise, was read:—

Feb. 11.—Since the last account, we have extended the 20 fm. level 6 fms. east and 8 fms. west from the engine-shaft; but do not expect any tin until we cross-cut north and cut Boyns's lode, which we intend to do immediately. We have driven in excellent tin ground, and have also a very good lode, east and west of Carthew's shaft, and have also a good branch of tin in the 12 fm. level, both east and west on the middle lode, and a lode 2 ft. wide, with rich tin in the 10 fm. level; on the north lode we are now driving six levels east and west from the engine-shaft; and four of these levels are producing tin. Last Friday being our pay and setting day, we set it to 36 men and six boys; and are glad to inform you, that the mine, on the whole, never looked better throughout than at the present day; and it may with propriety be stated, for the satisfaction of the shareholders, that at the last account the quantity of tin at the surface was worth 60*l.*; and to-day the amount of tin lying at the surface is worth upwards of 150*l.*, hereby showing the value of the mine is greatly enhanced, and the quantity of tin is daily increasing; so that, coupled with the steady advancing price, we may expect at the next account that the first dividend ever declared for a mine in the parish of Sancreed, will be declared on the 15th day of April next, which is appointed for the account.

RHOSWIDDOL AND BACHEIDDON LEAD MINES.

A bi-monthly meeting of shareholders was held at the offices, Old Jewry, on Tuesday, the 12th inst., at which the agent was present; and in addition to his bi-monthly report, dated the 4th, he laid before the shareholders the following supplementary report:—

Feb. 9.—There is no change in Prosser's level; in the Smithy level the men have driven 3 ft. further east—it continues orey; the stope in the back holds productive. Davies's cross-cut is as before. In John Francis shaft the water is too heavy to work just at present. In Augustus level the men have been clearing their stuff, and also in the junction of the lodes. In Old Smithy level the two men have risen 6 ft. to the Augustus shaft. At Nant shaft, the adit level has been driven 2 fms. further east; the lead improves a little; when we commenced driving, it would yield about 5 cwts. to the fm.; it yields now about 10 cwts. to the fathom; we have 30 fms. of backs in this level to surface. The 10 fm. level has been driven 8 ft. further east—the ore is not quite so good as before; but fresh branches are coming in in the end; the stope in the eastern back of the 10 fathom level continues quite as good as before. We attach more importance to this stope than any in the Nant shaft, because it is the easternmost—consequently, the furthest into the hill; it has 40 fms. of backs, and 30 fms. to Smithy level; it appears to have settled into a steadily producing piece of ground. The 17 fathom level has been driven 6 ft. further east through orey ground; the two stopes, in the back of the 17 fm. level, are still producing excellent ore; the men cut there to-day five solid stones of lead ore from 40 to 50 lbs. weight; the stope in the bottom of the 17 fm. level is as before. We estimate the following stopes and levels as now producing for this month:—Adit level, four men driving, 2½ tons; 10 fm. level, two men ditto, 1½; stope in the back of the 10 fathom level, three men stoping, 5; 17 fathom level, two men driving, 1½; stope in the back of ditto, three men stoping, 5; stope in ditto, three men stoping, 5; stope in bottom of ditto, two men driving, 1½: total, 19 men, 22 tons. In addition to the above, there is Smithy level, east and west; but these places are too irregular in their yield to attempt to value the produce. As you will, perhaps, have to make a financial statement at the next bi-monthly meeting, I beg to furnish you with the following estimate of lead ore:—Now on board the *Friendship*, 20 tons; now on surface and underground, 50; now raising for February, 25=95 tons. We have been interrupted this week in the dressing department.

From these reports, it appears that the mine is now producing regular supplies of ore, and the shareholders may fairly calculate upon its making them handsome returns for their outlay. An account was laid before the meeting of all the liabilities of the mine, and it was resolved to make a call of 8s. per share, in order to liquidate them, which will leave the proceeds of the 95 tons of ore as a working capital.

TAVY CONSOLS MINING COMPANY.

The usual two-monthly meeting was held at the mine on the 5th inst., when the accounts were presented, showing—

Balance from last statement	£230	16	4	
Labour cost for November	139	0	7	
" December	136	6	10	
Merchants' bills, &c.	21	15	8—	£527 19 5
Bill for October ore	105	11	5	
Cash for mundic	24	10	0	
November ore	121	16	8—	251 18 1
Leaving balance				£276 1 4

The following report, from Capt. W. Goss, was read to the meeting:—

Feb. 4.—We have not yet cut the north or main lode in the 46 fm. level, which I fully expected would have been done by this time; but, in driving the last 6 ft., we have met with branches of spar, and the water is becoming stronger, which gives me good hopes of soon seeing the lode; south, in the same level, the ground continues favourable, but we have not cut the wheel-pit lode—price 40s. per fm. The eastern level at the 46 is at present suspended. In the 36 fm. level, east of the shaft, the lode is from 6 to 8 ft. wide, chiefly composed of spar, producing occasionally good stones of ore. This is an important place in the mine, and ground favourable; I should, therefore, recommend this end to be continued, as it will, in a great measure, prove the eastern part of the mine—driving by two men and two boys, at 5*l.* 10s. per fm. In the cross-cut south, in the 24 fm. level, I expected to have cut the lode before this, but the ground is unfavourable, and has greatly impeded our progress; but, as it is changing and becoming better, I am in daily expectation of intersecting the lode at this point—driving by two men, at 5*l.* per fm. The 12 fm. level continues to progess with fair dispatch, opening tribute ground; the present end will turn out 2 tons of ore per fathom, and is very favourable—driving by three men and three boys, at 3*l.* 10s. per fm. In the tribute department we have four pitches working at an average of 12s. in 1*l.* Upon the whole, the pitches are improved since last general meeting, and the tributers all getting wages. I should have sampled yesterday about 55 tons of ore, but the assayer could not attend; but the sampling will take place on Wednesday. We shall sample about the same quantity for the present month. Our machinery all in good order.

The accounts, having been examined and found correct, were allowed and passed; and the amounts due on shares forfeited for non-payment of calls at last general meeting having been tendered within the given time, they were restored. A call of 5s. per share was made. The thanks of the meeting were given to the chairman, and to the committee for the past two months, who were appointed to form the committee for the ensuing two months.

WEST POLGOOTH TIN MINING COMPANY.

The first two-monthly meeting of shareholders was held at the offices, Old Broad-street, City, on Thursday, the 15th inst.

RICHARD HALLET, Esq., in the chair.

The accounts for the past month, amounting to 195*l.*, having been examined, were passed and ordered to be paid.—A report from the mine agent was read, which showed the engine-shaft to have been sunk and timbered down 8½ fms.; the roads to the mine were completed; and about 150 loads of stone, drawn on

the mine, ready for the erection of the engine-house. The ground in the shaft was getting much harder, so as to now stand without timber. The engineer stated that, at the next meeting, he should be able to lay before them a tin bill for tin sold, which, although it would not be much in amount, would, nevertheless, show the produce of the mine.—It was then ordered, that the 24-in. cylinder engine, which is intended for the stamps, should be erected single-acting for the present, so that the nature of the lode, and the quantity of water, may be ascertained before the erection of the large engine. It is estimated the north lode will be fully developed 20 fms. under the adit in three months, when considerable returns will be made.—The meeting separated highly satisfied with the prospects before them.

WHEAL MARY MINING COMPANY.

At a meeting of adventurers, held at the mine, on Wednesday, the 13th inst., a statement of accounts was presented, showing—

Balance of last account		£912 16 1	
Mine costs for November and December		820 9 9	
Merchants' bills		310 16 0	£2044 1 10
Copper ore sold Nov. 8	£540 5 2		
„ Dec. 6	622 18 2		
	£1163 3 4		
Less 1-18th dues	64 12 4	1098 11 0	
By fourteenth call, at 10s. per share		495 0 0	1593 11 0
Leaving balance against the adventurers			£ 450 10 10

The accounts having been examined were allowed. It appearing that a balance of 450*l.* 10s. 10d. was due to the purser, a call of 5s. per share was made.

The following report, from Capts. P. Rabey and C. Andrawartha, was read:—

Feb. 13.—At Wheal Mary lode, since the last meeting, we have commenced sinking the engine-shaft below the 90 fm. level; the lode is north of the shaft 6 ft.; it is sunk 7 ft. under the level. In the 90 fm. level east the lode is about 2 ft. wide and poor; west of this level the lode is 3 ft. wide, composed of spar, capel, and ore, and looking kindly for making ore. In the 80 east the lode is about 2 ft. wide, composed of spar and capel, and looking kindly; this end is letting go much water. In the 70 east the lode is 2 ft. wide, composed of capel and ore—saving work; it is letting go much water, and has very much improved within the last 6 ft. driving. In the 50 east the lode is intersected by a small cross branch, which we are now cutting through; the lode has produced about 2 tons of ore per fm. for the last two months. In the 50 west the lode is 3 ft. wide, composed of capel, mundic, and killas, and letting go much water. Parent lode, in the 50 fm. level east, is 18 in. wide, and poor. In the 40 east the lode is 2 ft. wide, and poor. In the 20 west the lode is 2 ft. wide, with good stones of ore, and looking very kindly. Our tribute pitches are looking well in general; we have 21 at work, at an average tribute of 8s. 7d. in 1*l.* We sold, on the 10th of January, 89 tons 18 cwts. of copper ore, which realised 482*l.* 7s. 5d., averaging 5*l.* 7s. per ton; and on the 7th instant 111 tons 19 cwts. 2 qrs. which realised 585*l.* 4s. 6d., averaging 5*l.* 5s. 6d. per ton.

WHEAL MARY ANN MINING COMPANY.

At a general meeting of adventurers, held at the White Hart Inn, Liskeard, on Wednesday, the 13th inst.—PETER CLYMO, jun., Esq., in the chair—a statement of accounts for September, October, and November, was presented, showing—By sales of ore, October, 1035*l.* 7s. 2d.; November, 1234*l.* 16s. 9d.; December, 1885*l.* 7s.=4155*l.* 10s. 11d.—By mine cost, Sept., 1014*l.* 18s. 1d.; Oct., 1025*l.* 15s. 10d.; Nov., 1059*l.* 9s. 5d.; balance of profit from last account, 1055*l.* 7s. 7d.=4155*l.* 10s. 11d. The accounts having been examined and passed, a dividend of 2*l.* per share was declared, amounting to 1024*l.*, and the balance of 377*l.* 18s. 8d. carried to the credit of next account. The bookkeeper's salary was advanced from 5 to 6 guineas per month.

The following report, from Capt. P. Clymo, jun., was read to the meeting:—

Feb. 13.—Pollard's shaft is sunk 12 fms. under the 50 fathom level. The 50 fm. level, north of the shaft, is now communicated with the 50 south of Barratt's shaft; the lode in the 50 fm. level, south of Pollard's shaft, is 15 in. wide, producing fine stones of lead and can; there are also three branches in this end, which we expect will fall in with the lode in driving a few fms. further south. The lode in the 40 fm. level, south of the shaft, is much improved in the last few days; it is now 2 feet wide, composed of can and lead, and worth 7*l.* per fm. The lode in the 30 fm. level south is 1 foot wide, and at present unproductive. The lode in the 15 fm. level south is 1 foot wide, composed of gossan and barytes. The lode in the 60 fm. level, south of Barrett's shaft, is 2 ft. wide, and worth 6*l.* per fm. The stopes generally throughout the mine are looking very well. We sampled on Saturday last a parcel of lead ores, computed 90 tons, which will be sold on the 18th inst. The new steam-whim will be put up to-morrow, which will effect a great saving in the drawing department. In conclusion, I am happy to say, that I have accomplished my promise made to you at our last meeting, in giving an increased dividend, and hope to have a much larger balance in favour of the adventurers at our next.

WHEAL SETON MINING COMPANY.

The usual bi-monthly meeting of adventurers was held on Monday, the 11th instant, when a dividend of 5*l.* per share was declared, leaving a balance of 502*l.* 19s. 5d. in hand. The statement of accounts showed:—

Amount of cost for November		£1506 14 11	
„ December		1211 13 1	
Merchants' bills		823 1 9	£3541 9 9
Copper ore sold (less 1-15th dues, 335*l.* 2s.)		4691 8 4	
„ western ground (less dues)		120 12 10	4812 1 2
Showing profit of			£1270 11 5
Add balance last account			222 8 0
Total			£1492 19 5
By dividend of 5*l.* per share			990 0 0
Leaves balance to next account			£ 502 19 5

WHEAL TRELAWNY MINING COMPANY.

A general meeting of shareholders was held at Liskeard, on Tuesday, the 12th inst., CHARLES CHIPPINDALE, Esq., in the chair.

The accounts for the three months, ending November, were examined and passed, showing a balance of 1991*l.* 2s. 11d. in favour of adventurers, when a dividend of 5*l.* per share was declared, reserving a balance of 691*l.* 2s. 11d. The profit for the three months amounted to 1424*l.* 10s. 4d.; the three parcels of silver-lead ores sold in October and December realised 6036*l.* 19s. 2d. The accounts showed—

September cost	£1558	0 4	Ore sold Oct. 27	£2022	18 6
October cost	1565	4 6	„ Dec. 4	2061	0 10
November cost	1571	14 0	„ Dec. 31, less discount	1952	19 10
Balance (profit)	1424	10 4	Trehane adventurers	82	10 0
	£6119	9 2		£6119	9 2

The following report, from Capts. Kemp and Ellery, was read to the meeting:—

In the 82 end, north of Phillips's shaft, the lode is 3 ft. wide, worth 11*l.* per fm.; in the south end, at this level, the lode is 3 ft. wide, worth 7*l.* per fm. In the 72, north of ditto, the lode is 2½ ft. wide, worth 9*l.* per fm. In the 92, north of ditto, the lode is 2½ ft. wide, worth 18*l.* per fm. Trelawny's shaft is in course of sinking below the 82 fm. level, and is now down 4 fms. below this level—the ground favourable for sinking. The lode in the 82 cross-cut, at this shaft, is 4 ft. wide, worth 10*l.* per fm. In the 72 end, north of ditto, the lode is 4 feet wide, worth 8*l.* per fm.; in the same level, south of ditto, the lode is 3 feet wide, worth 9*l.* per fm. At the north mine, in the 55 end, north of Trehane, there is no alteration to notice. In the 40 end, north of Smith's shaft, the lode is 2 feet wide, worth 8*l.* per fm. We have resumed sinking the winze in the bottom of the 30, north of ditto, where the lode is 1½ ft. wide, worth 7*l.* per fm. The appearances of our stopes are much the same as for some time past, and our prospects, on the whole, are of an encouraging nature.

WHEAL TREMAYNE MINING COMPANY.

At a meeting of shareholders, held at the mine, on Friday, the 8th inst., the accounts for Nov. and Dec. were submitted, showing—Balance in hand last account, 417*l.* 13s. 11d.; sale of copper ore, 696*l.* 18s. 1d.; black tin, 1833*l.* 14s. 7d.; arsenic, 168*l.* 15s.; balance of July and August tin sales, 39*l.* 7s. 6d.; miscellaneous charges, 51*l.* 11s. 1d. (less 1-40th lords' dues, 68*l.* 9s. 5d.)=3139*l.* 10s. 9d.—The accounts having been examined were passed, and a dividend of 10s. per share declared, leaving balance of 433*l.* 13s. 9d. to next account.—The following report, from Capts. R. S. Bryant, J. Phillips, and R. Williams, was read:—

Feb. 8.—At Painter's shaft, the lode in the 30 fm. level west is 2 ft. wide, composed of flookan, quartz, and mundic, having a promising appearance. The 30 fm. level east, on caunter lode, is 2 ft. wide, unproductive; this has been driving through an elvan course, shortly after passing which we expect an improvement, judging from the appearances on the backs and in the shallow adit level, where it is opened on for some fathoms. At Thomas's shaft, in the 50 fm. level west, the lode is 2 ft. wide, opening tribute ground. At Medron's shaft, the 60 west is opening tribute ground; in the 60 east the lode is 2 ft. wide, yielding a small quantity of tin. The 70 east is worth 6*l.* per fm.; the 70 west is worth 3*l.* per fm. At Laurie's shaft, in the 30 fm. level east, on the north lode, the lode is 1 ft. wide, opening tribute ground. At new shaft, the 53 fm. level, east on Allen's branch, is worth 5*l.* per fm.; the 53, west on ditto, is worth 5*l.* per fm. At Allen's shaft, the 53 fm. level, east on Allen's branch, is worth 10*l.* per fm.; the 53, west on ditto, 4*l.* per fm.; the 53, west on the engine lode, is worth 4*l.* per fm. Allen's branch has been intersected by a cross-cut 14 fms. west of Allen's shaft, where the branch on both sides of the cross-cut is worth 10*l.* per fm. The 45 fm. level, west on the engine lode, is worth 4*l.* per fm.; a winze in the bottom of this level, on Allen's branch is worth 3*l.* per fm. The 45 fm. level, west on Allen's branch, has been driven to the boundary, where we have commenced rising against the boundary shaft, worth 20*l.* per fm. The boundary shaft, sinking below the 35 fm. level, is worth 12*l.* per fm.—this shaft has been sunk from surface 26 fms. and is progressing favourably. Our tin tribute department is looking as well as for some time past. We have estimated the stock of tin on the mine up to the 31st ult., which amounts to 64 tons.

BOSWEDDEN MINES.—A special meeting of adventurers is to be held at the Union Hotel, Penzance, on Monday, the 25th inst., at which, amongst other business, the propriety of purchasing from the adventurers in Bollowal and Nanpean Mines their interest in that sett, or of selling the interest in Boswedden to Bollowal and Nanpean adventurers, or of consolidating both concerns, and if either, on what terms will be taken into consideration; and if found practicable, one or other of these propositions will be determined on.—The purser of Bollowal and Nanpean has, also, called a meeting of his co-adventurers, at the same time and place.

EAST GUNNIS LAKE JUNCTION.—A special general meeting of shareholders in Bedford United was held on Thursday, the 14th inst., at the offices, Threadneedle-street—H. L. BLAKSLEY, Esq., in the chair.—The object of the meeting was to sanction a proposal made at the two-monthly meeting, held on the 31st Jan., and contained in the following resolution:—"That all that portion of the Bedford United Mines sett, to the south of the bridge lode, with the right of the use of the waste water, leats, &c., not occupied in the working of the northern portion of this sett, be sold to the lessees of the East Gunnis Lake Mine sett, for the sum of 500*l.*, with power to the shareholders of this adventure to take a like interest or share in any new company that may be formed, as they may then hold in the Bedford United Mines." The meeting having unanimously acceded to the proposition, gave instructions to Messrs. Coode, Browne, and Co., to prepare the deeds for the same.

SOUTH PLAIN WOOD.—The first two-monthly meeting of shareholders was held at the Auction Mart Coffee-house, Bank, on Thursday, the 14th inst.—THOMAS CAMPLIN, Esq., in the chair.—The reports from the agents were read, and the accounts produced, audited, and adopted.—The CHAIRMAN congratulated the shareholders present on the satisfactory position of their prospects.—The meeting then separated, apparently well pleased with the proceedings.

WEST WHEAL FRANCES.—A general meeting of shareholders was held at Cambourne on Tuesday, the 5th inst., when the accounts from Sept. to Dec. were audited and passed, showing balance of 16*l.* 3s. 4d. due to purser. A call of 1*l.* per share was made. The committee of management were empowered to purchase a steam-engine suitable to the purposes of the mine. Messrs. Hocking and Loam were appointed engineers.

COMPANY OF COPPER MINERS IN ENGLAND.—The committee of shareholders, elected last April to take the necessary steps for the rescuscitation of this company, we are happy to state, are progressing favourably with their labours. The bill to amend the constitution of the association will be brought before the House of Commons at an early period of the session. By a small section of the debenture-holders a factious opposition has been shown, which has tended in no slight degree to embarrass the committee in their arduous task, with a faint hope of compelling them to satisfy their demands in full, to the great prejudice of their fellow-creditors. The committee not having acceded to their extravagant demands, the bill, which is so framed as to deal even-handed justice to all parties, if passed, will force them to accept the same terms as the other creditors; but little opposition is apprehended in the House; and there is no doubt that the period is not far distant when we shall see the company again in possession of their valuable property. The Bank of England not having prosecuted the entiety of the different works of the company, many people have been partially deprived of employment; and the reinstatement of the company would be hailed with satisfaction by all parties in the surrounding districts.

KELPINA.—The discovery of a new alkali from kelp is attracting much attention, as pregnant with great results for the Highlands and the Islands.

BOARD OF TRADE RETURNS.—The accounts relating to the trade and navigation of the United Kingdom, published to-day by order of the House of Commons, present a complete view of the foreign and colonial trade of the country for the year 1849, showing the amount of imports and exports of foreign and colonial merchandise, and also the exports of British and Irish produce and manufactures, as compared with the preceding year; and if there are still to be found any who doubt that free trade is a blessing to the nation, let them peruse these tables, which exhibit an enormous increase in the consumption of all the great staple articles of food, which the people are happily able to purchase, when brought to them at a cheap rate, and in return we see an increased demand by foreigners for our manufactures, which must convince the most sceptical that gold does not go out of the country to pay for the food and luxuries we purchase from them. The exports of British and Irish produce and manufactures for 1849 (the first year of free trade) amount to 58,848,042*l.*, which are nearly 10,000,000*l.* in excess of 1848, and exceed, by 7,750,000*l.*, the exports of 1847. The exports of foreign and colonial merchandise for the same period show an increase of cocoa, coffee, cochineal, indigo, lac-dye, embroidery and needlework, guano, hides, leather, linens, copper, iron, steel, lead, spelter, tin, palm and cocoa-nut oil, opium, quicksilver, raw silk and silk manufactures, spices (except cloves and nutmegs), rum, brandy, gin, sugar, tea, tobacco, wines, cotton, wool, and woollen manufactures, while there is a decrease in Turkey red yarn, window glass, and glass manufactures.—*Morning Chronicle.*

COPPER RETURNS.—The annual copper returns were moved for by Mr. Pendarves in the House of Commons on Tuesday.

Among the colliers in the neighbourhood of Bolton, an advance of wages has taken place, commencing Jan., 1850, which advance will realise to each miner about 2s. 6d. weekly.

THE ABERDARE COLLIERS.—The new colliers, obtained to supply the place of those who have "struck," have been deterred from entering the pits, on account of the accumulation of damp. Two men who entered were severely burnt. This, in the eyes of the "standing out," is taken for an interposition of Providence on their behalf! On the brink of starvation, there seems not the most distant prospect of their returning to work. Numbers of men have been obtained from the lower part of the county to supply their places. This has so irritated the "strikers," that they have informed the Aberdare Railway Company that if any more colliers be brought up they will rise the rails. The railway officials have taken measures to prevent any such attempt.—*Cambrian.*

YSTALYFERA—REVIVAL OF AN OLD BARBAROUS CUSTOM.—The old custom of chasing offenders out of the works was observed here on Wednesday last. Two Englishmen, who were not on the best of terms with the natives, accused some Welshmen of unfair dealings about tools, which accusation the Welsh said was falsely got up by the others for the sake of getting the work into their own hands. The ultimate result of the dispute was the chasing (or hunting, as they call it), the two Englishmen out of the works, by a lot of boys.

ACCIDENTS—*(Continued).*

Dreadful Accident—Three Men Killed.—On Saturday last, a melancholy accident took place at Mr. George Jones's furnace, near Bilston, in consequence of the water belonging to the tuyére of one of the puddling furnaces being suddenly generated into steam, and an explosion thus ensuing. Three men were so badly injured that they died on that or the following day—namely, Edward Wittingham, aged 47, the furnace keeper, a puddler named John Willington, aged 35, and another, whose name we were unable to learn. T. M. Phillips, Esq., held an inquest on Monday, at the Bird-in-Hand, High-street, Bilston, when a verdict of "Accidental Death" was returned.

Durham.—J. Robson, aged 11 years, a rolley-driver, whilst at his work in the West Minor Pit of Hetton Colliery, was crushed between the shafts of a rolley and a tub, which was running amain, and received such injuries as resulted in his death.

Brierley Hill.—R. Scriven, a lad, aged 12 years, met with his death on Thursday last, by accidentally falling down the shaft of a pit, having been dazzled by the light of the fires, while on his road to work.

Birchgrove Colliery.—As Elias Howell was driving his horse down the plane leading to the Swansea Valley Railway, he was killed by a collision of two or three laden waggons which were incautiously let down by the breaksman.

Gorse Colliery.—William Morris, aged 48, was killed by a large stone, about a ton in weight, falling on him.—About a year ago, a son of the deceased was killed under similar circumstances, in the same colliery.

Wheal Owles.—As James Oates was packing the powder in the hole, before the first laying of tamping was put in, it exploded, and seriously injured him.

Ballswidden Mine—Serious Accident.—Christopher Ellis, a miner, fell a depth of 10 fms

NOTICES TO CORRESPONDENTS—*(Continued).*

"B. T." (Newcastle) writes—"I would thank any of your readers to inform me, what degree of compression of atmospheric air has been attained by the fan-blast, stating the diameter and width of the fanner, and the number of revolutions per minute?"

"R. P." (Cork).—In sampling ore, the water weight is generally taken by weighing a pound avoirdupoise in its wet state. This is generally dried on a sand bath, and when thoroughly dried is reweighed; the quantity deficient will give the per centage of the water in the pile of ore;—thus, if it be deficent half-an-ounce, the quantity of water will be 3·12 per cent.; a larger or smaller deficiency will, consequently, be in the same proportion.

EL DORADO—The term "El Dorado" is commonly considered to have reference to the sovereignty teeming with precious metals, which had long been sought for in vain by Spanish adventurers. Their expeditions in quest of it were directed to the interior of the vast region lying between the Orinoco and the Amazon, or Guiana. The rocks were represented as impregnated with gold, the veins of which lay so near the surface as to make it shine with a dazzling resplendency. The capital, MANOA, was said to consist of houses covered with plates of gold, and to be built upon a vast lake, named Parima, the sands of which were auriferous. We abridge the following new version of this "romance of history," from a brilliant paper on the life and works of Raleigh, in the *Edinburgh Review*:—"The term 'El Dorado' was not originally used to designate any particular place; it signified generally 'the gilded,' or 'golden,' and was variously applied. According to some, it was first used to denote a religious ceremony of the natives, in covering the anointed body with gold dust. The whole of Guiana was, on account of the above usages, sometimes designated *El Dorado;* but the locality of the fable varied. The question, however, to be solved is, whence arose the belief that a district so marvellously abundant with the precious metals existed in the interior of Guiana; and the solution appears to have been left to Humboldt. While exploring the countries upon the Upper Orinoco, he was informed that the portion of Eastern Guiana, lying between the rivers Essequibo and Branca, is the classical soil of the Dorado of Parima. In the islets and rocks of mica, slate, and talc, which rise up within and around a lake adjoining the Parima River, reflecting from their shining surfaces the rays of an ardent sun, we have materials out of which to form that gorgious capital, the temples and houses of which were overlaid with plates of beaten gold. With such elements to work upon, heated fancies, aided by the imperfect vision of distant and dubious objects, might easily create that fabulous superstructure. We may judge of the brilliancy of these deceptive appearances, from learning that the natives ascribed the lustre of the Magellanic clouds, or nebula of the southern hemisphere, to the bright reflections produced by them. There could not well be a more poetical exaggeration of the lustrous effects produced by the metallic hues of rocks of talc. These details, in which M. de Pons, a somewhat later traveller, who long resided in an official capacity in the neighbouring countries, fully concurs, in all probability point to the true origin of this remarkable fable. The well-known fable of Raleigh did not discourage other adventurers, who were found in quick succession; the last always flattering themselves with the hope that the discovery of *El Dorado* would ultimately be realised.

THE SCOTCH IRON TRADE—ITS RISE AND PROGRESS.

STATISTICAL RETURN OF FURNACES.

Years.	In Blast.	Out of Blast.	Total Furnaces.
1788	8	—	8
1796	17	—	17
1823	22	—	22
1830	27	—	27
1846	97	25	122
1847	89	43	139
1848	103	36	139
1849	113	31	144

The two furnaces first erected were the Goatfield and Bunawe (charcoal); of the working of which, however, we have no record after 1796; the next, the Wilsontown, was discontinued in 1830. The most important is the Gartsherrie Company, which commenced in 1846, with 14 furnaces in blast and 2 building=16, which have continued until the present period.

THE AMERICAN IRON TRADE.

We take the subjoined article from the New York *Journal of Commerce*:—

IRON.—The following is an extract of a letter from an ironmaker in the interior of this State to a gentleman in this city:—The Port Henry furnaces cost about $16,000 each, without including the cost of coal kilns, dwellings, ore bed, &c.; the whole investment is not less than $100,000. The cost of making the cast-iron there is, per ton:—

150 bushels of charcoal, 7 c. per bushel	$10·50
1½ ton of ore, at $1·50 per ton	2·25
Flux	25
Labour	3·00
Interest on capital and repairs	2·00
Yearly product when in operation, 3000 tons each	$18·00

The Crown Point furnace cost $15,000, besides which they have invested in coal kilns, dwellings, ore bed, &c., $25,000 more. The expense of making iron is about the same as at Port Henry. The furnace produces about 3000 tons of iron per annum.

The Constantia furnace cost $12,000. The cost of making iron is—

150 bushels of charcoal, at 5 c. per bushel	$7·50
2 tons of ore, $1·75 per ton	3·50
Flux	25
Labour	2·00
Interest on capital and repairs	3·00
Total	$16·25

The furnace produces about 2000 tons of iron per annum.

The cost and expenses at Taberg are about the same as at Constantia.

I have no means of knowing the cost of the furnace at Poughkeepsie. Their capital is $50,000, all paid in. The expense of making iron is—

2 tons of coal, $1·40 per ton	$8·80
2½ tons of ore, $2·50 per ton	5·62
Interest on capital, repairs, &c., and labour	5·00
Three-quarters of a ton of limestone, 75 c. per ton	56
Total	$19·98

The iron from these different works has to be transported to a market, and is usually sold through commission merchants, which consumes a few more dollars per ton, before the manufacturer realises anything from it.

The iron business at the present time is in a very depressed state, and unless the tariff is modified this winter, or the price rise, most of the furnaces that have made out to keep along to the present time, will have to stop.

In the Lake Champlain region, in this State, there are seven furnaces, and but one is now in operation, and that one will soon stop.

It will be observed, that in all the furnaces, except the last, charcoal is made use of, which is much more expensive than fossil coal at or near the mines from which it is taken. Yet at two of the furnaces mentioned, the cost of pig-iron is stated at only $16·25, including repairs and interest on the capital. This is $4 less than the cost of imported pig laid down in New York, as appears by the following statement handed us by an iron dealer in this city, himself a tariff man. He gives the exact cost of two invoices recently imported by himself—one from Liverpool, the other from Glasgow:—

	Imported from Liverpool.	Glasgow.
Original cost and charges per ton	$13·01	$11·19
Insurance	15	25
Duty	3·90	3·30
Freight	2·52	4·80
Weigher	10	10
Broker	10	10
Interest, &c.	52	45
Cost in New York	$20·20	$20·19

So the Constantia and Taberg ironmasters can pay $4 a ton, which, we presume, is more than the actual expense for transporting their iron to this market, and then stand on the same footing in respect to profits as the importer. For all the country nearer the said furnaces than to this city, the iron produced there would have a decided advantage.

At the Poughkeepsie furnace, as we understand the matter, both ore and coal are brought from a distance, and consequently, in order to make the business profitable to a given extent, would need to be "protected," not only against the importers of iron, but against those home producers whose works are more advantageously situated. We have it from a gentleman largely interested in a Pennsylvania furnace, that he can deliver pig-iron in Philadelphia at $15 a ton (excluding interest and profit).

Now, to which of these cases is the protection to be graduated? If you impose a duty sufficient to give the Poughkeepsie ironmaker a satisfactory profit above $20 a ton (the cost of his pig at the works), you give the Pennsylvania ironmaker, just alluded to, a profit of $6 or $8 per ton, which comes out of the pockets of the consumers. The latter, in fact, needs no protection on pig, even at the present low price of the article, while the former requires a duty even higher than the 30 per cent. now imposed; and if his works were on the top of Cattskill Mountain, he would require a still higher protection. If the duty is light, care is taken to select the best locations, and then the utmost economy and skill are used in conducting the business. In the long run, we have no doubt that this state of things is most advantageous, even to the ironmakers, and it certainly is to consumers.

THE STEEL TRADE.

A very improved state of things exists in this branch of manufacture, as compared with last year. There is scarcely an unemployed furnace, tilt, forge, or rolling mill in Sheffield. The price of foreign iron, for the commonest steel purposes, rules in Gottenburg and Stockholm, from stock purchases, at an advance of from 10 to 15 per cent., with reluctance on the part of the Swedish iron manufacturer to enter into engagements for the coming season, even at this advance. Middle-class and best marks are firm, and have maintained their prices all through the depression, although the price of steel has fallen, during the last two years of disturbed trade, to an almost non-remunerative rate. At no former period in its history has there been such a fall; and it is only reasoning from analogy to say, that, with the advance of iron, an advance, in the same ratio, may be expected in steel. The stocks of steel being low amongst dealers and consumers, any state of things giving employment to the latter will cause a demand which must be satisfied, at the cost of an advance. And when the great increase of exportation to the United States is considered, the manufacturer for the continental or home markets may fairly expect an advance in the spring, upon his last year's prices, from the withdrawal of competition.

The staple trades of Sheffield are all in full employment, or nearly so; and a curtailing of discounts is silently taking place in the heavier branches in general. In the new branch of the railway spring trade the minimum of prices has been reached, and a progressive advance on each contract may, with firmness, be realised. The necessary resumption of railway operations in the renewal of their rolling stock will materially enhance the prices of steel, files, and springs, and thus interpose a legitimate barrier to the late system of profitless tenders, which, when awarded to the lowest contractor, as is often the mistaken policy, is calculated to introduce speculation into the trade, to the injury of the respectable manufacturer, as well as the company, from an impracticable price on the one hand, and a consequent depreciation of quality on the other.

The stocks of foreign buyers throughout Europe are light. This fact, in connection with the resumption of peaceful business operations from the Elbe to the Danube, and from the Rhine to the Vistula, will justify the giving out of regular orders, the loss of which has been so severely felt for a long period. The bountiful harvests, over the same space, for the last two years, having liberated specie from its almost exclusive employment in the purchase of food, the application of it in exchange for manufactured goods may be expected very materially to assist our large manufacturing centres; and it is very much to be wished that such a state of things might, as far as possible, be perpetuated by our Foreign Minister again calling the attention of different Governments to the amelioration of the duties upon Sheffield goods, which are very severely felt, especially from its being a handicraft trade in which there is not such a quantity of machinery employed as in the cotton and woollen branches, which assists Manchester and Leeds in competition. It is very much to be regretted that articles in steel should be almost wholly prohibited in France, and although not in the same degree, yet to a most enormous extent of imposition, in the Zollverein, or German Customs' Union, while they receive at our hands such liberal treatment in their imports to our country.

In many branches of the trade the operatives have regained their old prices, and in most others are fast taking up this position; which natural and healthy action, resulting from real improvement, will produce an unavoidable necessity, on the part of manufacturers, to be proportionately remunerated in the sale of their goods. Even in branches not connected with steel, such as silversmiths, silver platers, Britannia-metal, stove-grate, and fender manufacturers, &c., &c., there is general brisk employment, such as has not existed in the ancient liberty of Hallamshire for many years.—BLAKE & PARKIN: Sheffield.

LONDON AND BLACKWALL RAILWAY.—The directors' report, to be submitted to the half-yearly meeting, to be held on the 19th inst., states that the gross revenue for the half-year has amounted to 24,303*l.* 0s. 11d., and the expenditure (inclusive of 2906*l.* 19s. 10d. for interest on debentures) has been 18,849*l.* 2s. 3d., leaving a surplus of 5453*l.* 18s. 8d., which, with the balance of 3162*l.* 17s. 2d. from the previous account, will admit of the payment of a dividend of 1s. 6d. per share, clear of income-tax, on the 107,240 shares at present entitled to receive dividend. The result of the six months' working with locomotives exhibits a reduction of the expenditure.

A deputation from the committee of railway shareholders at Birmingham Manchester, and Liverpool, consisting of Mr. J. C. Ewart, Mr. J. Ryley, Mr. T. F. Bennett, Mr. J. James, Mr. H. Crossfield, and Mr. Swift, had an interview with the Commissioners of Railways yesterday, at the Board of Trade offices.

WEST CORNWALL RAILWAY BILL.—On Tuesday last, the first reading of this bill was moved in the House of Commons by Mr. Pendarves.

HAWKMOOR.—There is a great improvement in the bottom of the shaft, where they are taking down the lode on the underlie. The eastern end at the 20, and the rise above the same, are still looking exceedingly well for ore and tin. About 6 tons of ore were hauled up from a tribute pitch west. They intend sampling 40 tons in a few days, and selling about 5 tons of tin as soon as it can be got ready.—*(From a Correspondent.)*

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 206½	Belgian, 4½ per Cent., —
3 per Cent. Reduced Ann., 95 4⅞ 5⅛	Dutch, 2½ per Cent., 55⅞ ¼
3 per Cent. Consols Ann., 94⅞ ¾ ⅝ ¾	Brazilian, 5 per Cent., 88½
3¼ per Cent. Ann., 97⅞ ¾ ⅞ ¾	Chilian, 3 per Cent., 59½
Long Annuities, 8½	Mexican 5 per Cent., ex Coup., 29⅞
India Stock, 10½ per Cent., 265	Russian, 5 per Cent., 110
3 per Cent. Consols for Acc. 95⅛ ¾ ⅞	Spanish, 5 per Cent, 18⅞ ¾ ⅞
Excheq. Bills, 1000*l*., 1½d. 57 54 pm.	Ditto 3 per Cent., 36⅞

Mines.—The share market continues to maintain the same favourable position it has held for some weeks; a very considerable amount of business having been transacted, and numerous enquiries continuing to be made. The metal market continues firm; lead has again advanced, with every probability of a further increase in price. Copper will, in all probability, receive a further advance; and although tin is stated to be temporarily depressed by recent importations, the sales of British produce betrays no downward tendency of price.

Devon Great Consols have been done at an advance on last sales, and inquiries for them continue.

Several shares in Trelawny have changed hands, and buyers continue.

Condurrow, Stray Park, East Pool, South Basset, South Frances, South Tolgus, &c., are also being sought for.

At Wheal Seton bi-monthly account for Nov. and Dec., a dividend of 5*l*. per share, amounting to 990*l*., was declared, carrying to credit of next account, 502*l*. 19s. 5d. The profit on the ores sold during the above months amounted to 1270*l*. 11s. 5d. The prospects of the mine are much improved, both in the deep levels and the western ground.

Trelawny quarterly account was held on the 12th, when a dividend of 1300*l*. was declared, being 5*l*. per share, and carrying to credit of next account a balance of 691*l*. 2s. 11d. Three parcels of silver-lead ores, sold in October and Dec., realised 6036*l*. 19s. 2d., and the profits for the three months amounted to 1424*l*. 10s. 4d. From the agent's report, we learn that the prospects of the mine are highly encouraging, especially the lode north of Phillips's shaft.

Wheal Tremayne bi-monthly account was held on the 8th, when a dividend of 10s. per share was declared for Nov. and Dec., leaving a balance to next account of 433*l*. 18s. 9d. The stock of tin on the mine, up to the 31st Jan., is estimated at 64 tons. The prospects of the mine continue most encouraging, with every appearance of greater improvement.

Wheal Mary Ann quarterly account was held on the 13th, when a dividend of 2*l*. per share was declared, leaving a balance of 377*l*. 18s. 8d. to credit of next account.

Wheal Trehane bi-monthly meeting was to have been held on Thursday last, when a dividend of 30s. per share, at least, may be expected for the two months.

At the Kingsett and Bedford meeting, the statement of accounts showed balance against adventurers of 40*l*. 13s. 8d., with liabilities amounting to the sum of 576*l*. 18s. 2d.; to meet which a call of 5s. per share was authorised within a month, and a further call of 5s., if necessary, before the next general meeting, which call would be responded to by all the shareholders, as the amount of 50s. per share will then have been paid, to which extent a certain number of shares were free. The report from the mine is highly satisfactory, and it is expected that any further call will be unnecessary, as the mine is now considered in a profitable position.

At West Wheal Frances meeting, the accounts for the four months, ending December, were audited, showing a balance of 16*l*. 3s. 4d. against the adventurers: and a call of 1*l*. per share was made. The prospects of the mine warranting more extensive operations, the committee were empowered to purchase a steam-engine suitable to the purpose.

A general meeting of Penzance Consols was held, on the 11th inst., when the accounts for the four months were audited, and a balance of 105*l*. 11s. 7d. found in favour of the adventurers. Since the last meeting (October 15) upwards of 14½ tons of tin have been sold, realising 699*l*. 8s. 3d., which has placed the mine in a profitable position. The agent's report is highly encouraging, and the first dividend may be anticipated at the next account, to be held in April.

At a special meeting of the shareholders in Mineral Court Mining Company, a very encouraging report from the captain was received, and the proposal to erect steam-stamps was adopted.

At the East Birch Tor meeting, the statement of accounts showed a balance of 42*l*. in favour of the mine, and the guarateed dividend of 2s. per share was agreed to be paid to the new shareholders from the produce of the ore now about being sold.

At the Rhoswiddol and Bacheiddon meeting, the report stated that the mines were now in a position of making regular returns of lead. A call of 8s. per share was made, to liquidate the present liabilities of the mine; 95 tons of ore are raised, and in course of raising, the proceeds of which will be applied as working capital.

A special general meeting of the Comblawn adventurers was held on Thursday, at which the accounts were submitted, and a call of 2*l*. per share made.

At Tavy Consols bi-monthly meeting, a call of 5s. per share was made, to meet the balance of 276*l*. 1s. 4d. against the mine: 55 tons of copper ore are ready for sampling, and about the same quantity is expected for the present month. The general appearance of the mine is considered more cheerful.

At the West Polgooth meeting, the accounts for the past month, amounting to 195*l*, were audited and paid. The proceedings appear to have been of a satisfactory nature.

Wheal Mary (Redruth) account for Nov. and Dec. was held on the 13th inst., when a call of 5s. per share was made. The balance against the mine was 450*l*. 10s. 10d. The general prospects of the mine are favourable.

Shares in the following mines have changed hands since our last:—Devon Great Consols, Tincroft, Trelawny, South Tolgus, Bedford United, Trehane, Mary Ann, South Basset, Hennock, Stray Park, South Trelawny, Kingsett and Bedford, Penzance Consols, West Providence, Wheal Tremayne, Devon and Courtenay, Treviskey and Barrier, Tregorden, Wheal Trescoll, Tamar Consols, South and East Tamar, Heignston Down, Pendarves, Wheal Margaret, Lelant, East Buller, Wheal Bal, Camborne Consols, and Arundel.

In Foreign Mines the following shares have been done:—St. John del Rey, Imperial and National Brazilian, Copiapo, Santiago, United Mexican, Guadalcanal, and Linares.

The attention of the public appears to be more directed towards the United Mexican—probably owing to the increased confidence arising from the satisfactory proceedings at the late meeting. Notwithstanding the low quotation, we believe there are very few shares in the hands of speculators, being chiefly held as investment by influential capitalists.

In reference to a letter received by the Australian Mining Company from their head captain, Alfred Phillips, dated April 30, 1849, advising the shipment of four rocks of ore from Tungkillo Mine, weighing—

	Cwts.				
1.	8	2	0	computed	40 per cent.
2.	6	2	0	,,	40 ,,
3.	6	1	0	,,	50 ,,
4.	2	2	19	,,	45 ,,
Total	23	3	19		42 average.

We are informed that they have just arrived by the *Cecilia*, and may be seen at the company's offices.

The St. John del Rey Company have dispatches from the mines to the 8th December, showing the produce for November, 21,427 oits.; cost, 4158*l*. 9s.; and profit, 3612*l*. 17s. 6d.

The Imperial Brazilian Company have received the following report of gold raised between the 4th and 12th December:—Gongo Soco, 2 lbs. 2 ozs. 13 dwts.; Bananal, 4 lbs. 11 ozs. 17 dwts.=7 lbs. 2 ozs. 10 dwts.

The Linares reports to the 2d February have been received, more than confirming previous expectations; and as they contain much interesting matter, we refer our readers to the superintendent's letter, as well as that of Captain Curry, which will be found under "Foreign Mines," in another column.

The Alten Mining Company have received dispatches to the 7th January; the estimated produce for Dec. is given at 142½ tons. The Raipas, United Mine, and the Old Mine, continue productive, with every appearance of further improvements. The other mines are also in an improving position; indeed, a long time has elapsed since we have seen these mines assume so favourable a position.

The following arrivals of specie have taken place since our last:—The Peninsular and Oriental steam-ship, *Euxine*, arrived on Friday night, the 8th, having on freight 20 packages of specie, value 73,408*l*.

The Lead Trade.—In our last number we announced the rise that was anticipated in this trade; at the same time we mentioned that merchants would not export under an advance of 20s. per ton. This has been acceded to by the buyers; and, during the present week, in the north of England, the prices obtained have been 18*l*. per fodder for common lead, and 19*l*. for the refined.

JOINT-STOCK BANKS.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
22.500	Australasia	£40	£3	£24
20,000	British North American	50	6	41
20,000	Colonial	25	5	7⅞
20,000	Commercial of London	20	6	22½
60,000	London Joint-Stock	10	6	17¾
40,000	London and Westminster	20	6	25⅞ 25¾
10,000	National Provincial of England	35	5	37
20,000	National of Ireland	22½	6	18½
20,000	Provincial of Ireland	25	8	41½
10,000	South Australia	22½	—	17¾ 18
20,000	Union of Australia	25	6	29½
60,000	Union of London	10	6	12⅞

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	9 ..	6
1024	Alfred Consols	8¾ ..	15
1024	Arundell	2¼ ..	—
1024	Ashburton United Mines	9¼ ..	12
1024	Balleswidden	9 ..	16
128	Balnoon Consols	42½ ..	50
905	Barristown	5¼ ..	4 5
3650	Bawden	¼ ..	¼ ⅜
6000	Bealbury	1 ..	1
4000	Bedford	2½ ..	5 5½ 6
1280	Birch Tor & Vitifer	10½ ..	6½ 7
5000	Black Craig & Craigton	3 ..	5
8000	Blaenavon	50 ..	10
5000	Blisland Consols	1 ..	4½
1024	Bodmin Consols	2 ..	2½
5000	Bodmin Moor Consols	1 ..	3
60	Bosorn	3½ ..	7½
100	Botallack	182 ..	30
120	Brewer	5 ..	2½
10000	British Iron, New, regis.	12 ..	8
—	Ditto ditto, scrip	10 ..	10
2400	Bryn-Arian	2 ..	4
107	Budnick Consols	52½ ..	12
1000	Callington	22 ..	5
1000	Camborne Consols	7 ..	5 7½
20000	Cameron's Steam Coal	7 ..	1
256	Caradon Mines	22½ ..	10
256	Caradon United	24 ..	5 8
256	Caradon Wh. Hooper	21 ..	4¾
1000	Carn Brea	15 ..	115
1000	Carthew Consols	1½ ..	7
113	Charlestown	220 ..	—
500	Comblawn	5¾ ..	4¼
128	Comfort	45 ..	64 65
256	Condurrow	20 ..	100
2560	Cook's Kitchen	14 ..	7¾
1000	Coombe Valley Quarry	5 ..	5
1000	Copper Bottom	7½ ..	—
900	Court Grange	9 ..	10
212	Craddock Moor	23½ ..	5
128	Creeg Braws	120 ..	30
500	Cubert Mine	12½ ..	—
1000	Cwm Erfin	4 ..	4 4½
1000	Daren	2 ..	3½ 4
7100	Derwent	8½ ..	5
502	Devon & Courtenay Con.	1½ ..	2½ 2¾
1024	Devon Great Consols	1	210 215
1000	Dhurode	2 ..	5
182	Dolcoath	30 ..	20
2560	Drake Walls	5½ ..	2½ 2¾
10000	Durham County Coal	45 ..	9
3000	Dyfngwm	10 ..	15
1020	East Alvenney	2¼ ..	5
2500	East Birch Tor	3 ..	3
1024	East Buller	1	5 5¼ 5½
112	East Caradon	47 ..	47
2048	East Crowndale	7¾ ..	1¼
128	East Pool	15 ..	60 65
9000	East Tamar Consols	¾ ..	1¼ 1¾
258	East Tolgus	1⅛ ..	4½
91	East Wheal Crofty	125 ..	65
128	East Wheal Rose	50	580 600
—	East of Scotland Iron Co.	5 ..	1¼
123	East Wheal Seton	14 ..	10
1280	Esgair Llee	2 ..	3
248	Exmoor Wh. Eliza	11 ..	10 12
494	Fowey Consols	40 ..	45
1024	Freidd Llwydd Mines	1½ ..	3¼
4000	Gen. Mining Co. for Irel.	1⅛ ..	1½
2500	Georgia Consols (Tin)	½ ..	¾
256	Gonamena	44½ ..	16
128	Goonvrea	4 ..	2
256	Grambler & St. Aubyn	80 ..	6
96	Great Consols	1000 ..	250
512	Gt. Wh. Rough Tor Con.	24½ ..	18 20
6000	Growa Slate Company	5 ..	5
1626	Gustavus Mines	3 ..	3
256	Hawkmoor	12⅞ ..	70
6000	Heignston Down Con.	1⅛ ..	2¼ 2½
1500	Hennock Silver-Lead	18s ..	5½ 6
4500	Hennock Iron & Tin	21s ..	21s
512	Herodsfoot	16 ..	14 15
10000	Hibernian	12½ ..	1⅞
1000	Holmbush	22 ..	13
1024	Kingsett and Bedford	1½ ..	4 4½
787	Kirkcudbrightshire	8½ ..	4 4½
2048	Lamherooe Wh. Maria	9 ..	4¼
252	Lanarth Consols	— ..	7
256	Lelant Consols	47 ..	25 26
160	Levant	— ..	160
1000	Lewis	17 ..	9½ 10
1000	Llwynmalees	9 ..	12
3600	Llynvi Iron	50 ..	50
253	Lostwithiel Consols	23 ..	10
6000	Marke Valley	10 ..	⅜ 1
5000	Mendip Hills	3½ ..	3 3½
128	Metha	34 ..	—
20000	Mining Co. of Ireland	7 ..	5½
256	New East Crowndale	3⅞ ..	4⅞ 5
100	North Pool	45	500 510
140	North Roskear	5¼ ..	150
262	North Wh. Leisure	1½ ..	2
15000	Northern Coal Co.	23 ..	2
128	Par Consols	55⅞ ..	650
1026	Pendarves Consols	2 ..	4½
1248	Pengelly Tin	1 ..	1
8000	Pennant & Craigwen	2½ ..	2
1024	Penzance Consols	22s 3d ..	5 6
512	Plymouth Wh. Yeoland	6½ ..	6
200	Polsaith Consols	5½ ..	4½
2500	Rhoswiddol & Bacheiddon	10 ..	10
10000	Rhymney Iron	50 ..	13
10000	Ditto New	7 ..	6¾
1000	Rosewall Hill	1 ..	5

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
256	Rosewarva Mines	— ..	12
2048	Runnaford Coombe Tin	1⅛ ..	4
9000	South Tamar	⅞ ..	3 3½
128	South Caradon	5 ..	200
1100	South Dolcoath	5 ..	¾ 1
256	Sth. Friendsh. Wh. Ann	30 ..	28 30
256	South Molton	7 ..	12 13
300	South Speed	5 ..	5
256	South Tolgus	16	130 135
256	South Trelawny	28½ ..	8
2000	South Wales Mining Co.	1 ..	1
128	South Wheal Basset	20½ ..	525 35
124	South Wh. Frances	160 ..	310
256	South Wh. Josiah	2 ..	3½ 4
1000	South Wh. Maria	2¼ ..	1¼
10000	Southern & Western, Irish	2½ ..	4
280	Spearne Moor	30 ..	40
24	St. Ives Consols	— ..	80
128	St. Michael Penkivel	5 ..	10¼
999	St. Minver Consols	1 ..	6
1000	Stray Park	43 ..	24½
9600	Tamar Consols	8 ..	7 7½
10240	Tavistock Consols	¼ ..	¼ ⅜
1024	Tavy Consols	6¼ ..	1½
6000	Tincroft	7 ..	12½ 13
58	Tokenbury	170 ..	10
240	Tolcarne	8 ..	15
256	Tregorden	3½ ..	7 8
256	Trenane	1¼ ..	32 33
5000	Treleigh Consols	6 ..	2½ 3
2000	Trenance	3 ..	—
1500	Trenault Lime Quarries	2 ..	3
96	Tresavean	10 ..	95
120	Trethellan	5 ..	18
120	Treviskey and Barrier	130	180 90 200
512	Trethevy Copper	1 ..	1
1000	Tyllwyd	2 ..	2½
200	United Mines	50	100 150
256	Wellington Mines	25 ..	15
128	West Buller	10	445 450
256	West Caradon	20 ..	95 100
512	West Fowey Consols	40 ..	12
—	West Par Consols	2¼ ..	—
2500	West Polgooth	5 ..	5
512	West Providence	9 ..	15 16½
200	West Seton	45 ..	150
120	West Trethellan	5 ..	5
512	West Wheal Frances	1⅛ ..	8 8½
256	West Wh. Friendship	9 ..	8
3845	West Wheal Jewel	12	2¼ 2½ 3
256	West Wheal Tolgus	80 ..	7
256	West Wheal Treasury	27½ ..	15
1024	Whiddon Mines	4¾ ..	2
5200	Wicklow Copper	5 ..	13¾
107	Wheal Adams	133 ..	150
1000	Wheal Agar	— ..	6
256	Wheal Albert	10 ..	1
240	Wheal Anderton	28 ..	15 20
128	Wheal Ann	— ..	50½
512	Wheal Anna Maria	7 ..	4
120	Wheal Bal	5½ ..	10
256	Wheal Benny	14½ ..	2
1024	Wheal Bray	11½ ..	10
232½	Wheal Calstock	9 ..	20 25
2 8	Wheal Courtenay	20 ..	23
182	Wheal Elizabeth	9 ..	12 14
256	Wheal Fortescue	15 ..	12 13
100	Wheal Friendly	70 ..	66½
388	Wheal Franco	27 ..	11 12
100	Wheal Henry	— ..	30
1024	Wheal Lawrence	3¼ ..	3½
112	Wheal Margaret	79 ..	210
512	Wheal Mary Ann	5 ..	32 33
5000	Wheal May	¼ ..	2
360	Wheal Oak	25½ ..	5
3000	Wheal Penhale	1¼ ..	6
210	Wheal Prospect	4 ..	7
120	Wheal Reeth	41 ..	150
128	Wheal Rose	60 ..	3
198	Wheal Seton	107 ..	240 50
180	Wheal Sisters	35¾ ..	5
512	Wheal Sophia	5¾ ..	5
128	Wheal Spearne	10 ..	60
128	Wheal St. Ann	30 ..	35
550	Wheal Trescoll	10¼ ..	19 20
260	Wheal Trelawny	7¾ ..	85 90
256	Wh. Tremaine (St. Ervan)	9½ ..	2½
1024	Wheal Tremayne	9¼ ..	7½ 8
267	Wheal Tryphena	40 ..	40
1000	Wheal Vincent	2⅛ ..	8
128	Wheal View (Perranz.)	1¼ ..	1¼
184	Wheal Vyvyan	— ..	60

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14¾ ..	2¼ 2¾
15000	Asturian Mining Co.	15 ..	2¼
20000	Australian	4 ..	6½ 6¾
6000	Barossa Range	1⅛ ..	1⅛ ¾
10000	Brazilian Imperial	23 ..	4¾ 5¼
12000	Cobre Copper Co.	40 ..	31 33
16000	Copiapo Mining Co	14 ..	4 3¼
20000	General Mining Ass'n.	20 .	13
4000	Guadalcanal	5 ..	1½ 1¾
2000	Ditto Preferential	2½ ..	2¼ 2½
5000	Kinzigthal Mining Ass.	2 ..	1¼
5051	Mexican Company	59½ ..	—
20000	Mexican & South Amer.	8 ..	1 1½
5000	National Brazilian	30 ..	6½
104000	N. Brit. Australasian	1 ..	¼
7000	Royal Santiago	10 ..	7¼
11000	St. John del Rey	15 ..	13⅞
43174	United Mexican ... Av.	28¼ ..	5¼ 5½
10,000	Worthing (S. A.)	2 ..	2½

**** We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length. 1850	Length. 1849	Present actual cost.	Price p. share	Div. 1849	Traffic Returns. 1850	Traffic Returns. 1849
Aberdeen	57	16	1,000,547	12½ 12¾	—	£771	£345
Belfast and Ballymena	37½	37½	514,968	17½	5*	446	378
Birkenhead, Lancashire, & Chesh.	19	19	1,088,804	37	5†	666	713
Bolton, Blackburn, & West Yorksh.	14	—	786,384	5¼	—	414	351
Bristol and Exeter	85¼	75¼	2,660,490	65	—	3250	—
Caledonian	160	141	5,149.320	11⅞ ⅜	3	5856	3622
Chester and Holyhead	100	84	3,358,217	10	4	1219	1186
Dublin and Drogheda	35½	35½	778,565	27	—	700	701
Dublin and Kingstown	7¾	7¾	395,915	—	—	575	692
Dundee, Perth, & Aberdeen Junc.	50	47½	544,554	8¼ ¾	6½	984	902
East Anglian (Lynn to Ely)	91½	67	1,247,446	1⅛	—	757	702
East Lancashire	75½	24	2,628,519	10½ ¾	5	2519	1888
Eastern Counties and Norfolk	322	295	12,027,069	7¼ 7⅞	—	13870	13249
Eastern Union	95	50½	1,782,703	4½	—	1836	1144
Edinburgh and Glasgow	57½	52½	2,923,199	28	6	2399	3189
Edinburgh and Northern	78	34	2,241,276	7	2	1959	1640
Glasgow, Paisley, and Ayr	104	74	2,574,330	52½	3	2533	2368
Glasgow, Paisley, & Greenock	23	23	852,846	12⅞	2	807	803
Gt. Northern & East Lincolnshire	143	—	5,138,756	6⅞ 6¾	5†	2954	1606
Gt. Southern & Western, Ireland	188½	110½	3,552,589	29½	6†	3625	3493
Great Western	230½	206½	11,867,042	66 64½	6½	—	17716
Lancaster and Carlisle	90	70	1,476,102	50½	4½	3083	1746
Lancashire and Yorkshire	220	127½	10,063,862	54 55	5⅞	10983	10899
Liverpool, Crosby, & Southport	13	—	84,455	5¼	—	71	64
London and North Western	478	428	26,251,635	113½	7	39044	37563
London and Blackwall	5¼	4	1,299,675	4½	1-12	619	571
London, Brighton, & South Coast	170	162½	6,502,600	80 80½	2½	6691	6363
London and South-Western	221	194	7,874,259	68 67½	5½	7807	7760
Londonderry and Enniskillen	14½	14½	185,739	16	—	105	—
Manchester, Sheffield, & Lincolnsh.	157½	94½	6,598,260	17½	5	4688	2817
Midland Company	483	423½	15,133,779	43¾ 3	5¼†	19729	18702
Midland Great Western (Irish)	50	36½	725,332	24½ 23⅞	4†	1014	1014
Monklands	36	—	486,245	—	6	—	—
North British	135	83	3,649,055	11 10½	4½	3050	2231
Scottish Central	45½	—	1,364,228	15 15½	7	1164	873
Shrewsbury and Chester	48	23	969,618	12½	5	1346	1294
Shropshire Union	30	—	——	2¾ 3	—	434	—
South Devon	57½	29	1,909,232	6	5	1491	1320
South-Eastern	189½	165½	8,666,007	19¾ 18⅞	5½	7838	6625
Taff Vale	38	40	879,110	—	7½	1674	1863
Ulster	36	36	723,829	45½	—	718	756
Waterford and Limerick	25	—	512,894	—	—	—	—
West Cornwall	13	—	——	—	—	275	193
Whitehaven Junction	12	12	150,879	9¾	3	188	—
York, Newcastle, & Berwick	290½	242½	6,827,849	15¾ ⅞	7	12255	11715
York and North Midland	260	234	4,983,618	19¾ ½	7	6303	6139

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending Feb. 9, was—No. of passengers, 19,127.—Amount of money, £79 13s. 11d.

Wheal Concord Mining Company.—The petition of Messrs. J. D. Lee, and others, was heard, on Wednesday last, by Sir William Horne, relative to the winding-up of the accounts of this mine under the Joint-Stock Companies' Winding-Up Acts of 1848 and 1849, and the receiver nominated by the petitioners has been appointed by the Master. Notices, we learn, have been served from the Master's office on the secretary, purser, and other parties connected with the administration of the affairs of the mine, to deliver to the official manager all books, papers, &c., belonging thereto, on or before the 18th inst.

Cerro del Bote Mining Company.—We regret to announce that further steps for the formation of a company to work this promising mine are abandoned. The subscription list closed on the 21st Jan. We understand about 25,000l. was subscribed, principally by the shareholders of the Bolanos Company. Mr. Kerricon (the proprietor) intends leaving England by next packet for Mexico, and we believe it is his intention to work the mine on his own account. The Bolanos Company are still in possession of the Celestina Mine, but it is anticipated that shortly the workings will be suspended; the company being in possession of no funds, the least depreciation in the mine must lead to this deplorable result. At the time of the meeting of the Bolanos Company to obtain fresh capital, we predicted that "failure would be ruin," but must confess we did not anticipate that so many difficulties would have arisen to prevent the formation of the Cerro del Bote Mining Company. Clear of all old liabilties, and the favourable terms at which it was offered to the public, must have ensured, if properly developed, a remunerative profit.

North British Australasian Company.—We understand that the directors have just received the balance-sheet from the colony made up at the 30th of June last. Are the shareholders to learn its contents at once, or are they to be favoured with a statement in about eight months after this, as they were last year?

LATEST CURRENT PRICES OF METALS.

LONDON, FEBRUARY 15, 1850.

Article	Price
ENGLISH IRON. *a*	*per ton.*
Bar, bolt, & square, London	£5 15—6 0
Nail rods	6 15 0
Hoops	7 15 0—8
Sheets (singles)	8 15 0
Bars, at Cardiff & Newport	5 0—5 5
Refined metal, Wales*	3 5—3 10
Do. anthracite*	3 15 0
Pigs in Wales	3 5 0
Do. do. forge	2 15 0
Do., No. 1, Clyde ... *net cash*	2 7 6–2 8
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3 15 0
Do., do., for tin-plates, boiler plates, &c., ditto	4 10 0
Stirling's Patent Toughened Pigs in Glasgow	2 17—3 0
Stirling's Patent Toughened Pigs in Wales	3 10—3 15
Staffordshire bars, at the works	6 0 0
Pigs, in Staffordshire	3 5 0
Rails	5 5–5 7 6
Chairs	4 0 0
FOREIGN IRON. *b*	
Swedish	13 0 0
CCND	—
PSI	—
Gourieff	—
Archangel	—
FOREIGN STEEL. *c*	
Swedish keg	14 15 0
Ditto faggot	15 0 0
ENGLISH COPPER. *d*	
Sheets, sheathing, & bolts, *p. lb.*	0 0 10
Tough cake *per ton*	88 10 0
Tile	£87 10 0
Old copper *e* *per lb.*	8½d
Yellow Metal Sheathing	8¼d
FOREIGN COPPER. *f*	
Russian	—
ENGLISH LEAD. *g*	
Pig *per ton*	17 10–17 15
Sheet	17 15–18 0
Red lead	18 0 0
White ditto	23 0 0
Patent shot	19 0 0
FOREIGN LEAD. *h*	
Spanish, in bond	15 10–16 0
American ditto	—
ENGLISH TIN. *i*	
Block *per cwt.*	4 5 0
Bar	4 6 0
Refined	4 11 0
FOREIGN TIN *k*	
Banca, H. C.	4 6—4 7
Ditto, for Export only	4 5 0
Straits	4 5 0
TIN-PLATES. *l*	
IC Coke *per box*	1 8 6–1 9
IC Charcoal	1 13–1 14
IX ditto	1 18 0
SPELTER. *m*	
Plates, warehoused *per ton*	17 0–17 10
Ditto, to arrive	16 12 6–17 2 6
ZINC. *n*	
English sheet *per ton*	22 0 0
QUICKSILVER *o* *per lb.*	4s. 0d.

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per ct. dis; *e*, 6 months, or 2½ per cent. dis.; *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.
* Cold-blast, free on board in Wales.

LIVERPOOL, Feb. 15.—Our market continues in a very healthy state; manufactured iron of all kinds is in good demand, and prices are well supported. Orders from America by the next steamer are expected to be heavy, and will help prices in their improved tendency. An unsuccessful attempt on the part of a few speculators to force up the prices of Scotch pig-iron, has been followed by a reaction, and in pig we must report a sickly market, and a downward aspect. For tin-plates the demand continues good. We quote I. C. coke, 28s. 6d., and I. C. charcoal, 33s. There has been a good business done in copper, without any change in price.

GLASGOW, Feb. 14.—The market is exceedingly quiet, with very little business doing. There does not seem to be much demand, nor does there appear to be any disposition to force sales. We quote the price of mixed Nos. at 48s. to 48s. 6d.—cash.

MANCHESTER, Feb. 12.—We still continue very quiet, and though the prices for Scotch pig-iron are, on the whole, fully as firm as at the close of last week, the amount of business doing is far from considerable. In Glasgow the rates are a shilling higher, and good marketable may be quoted at 48s. to 48s. 6d. per ton cash—free on board at that place.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—Silver bars to Belgium, 19,000 ozs.; ditto to Dunkirk, 80,000—Total, 99,000 ozs.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars .... per oz.	£3 17 9	New dollars .... per oz.	£0 4 10½
,, Portugal pieces....	0 0 0	Silver in bars (standard)	0 4 11⅞

LEAD ORES.

Ticketings at the White Horse Hotel, Holywell, February 14.

Mine.	*Tons.*	*Price per Ton.*	*Purchaser.*
Maesyrerwddu (Talargoch)	48	£11 17 6	Mather & Co.
ditto ditto	48	11 18 6	Newton, Keates, & Co.
Coetia Llys ditto	45	12 5 0	ditto
Hendre	66	11 8 0	Walker, Parker, & Co.
ditto	14	11 8 0	ditto
Deep Level	104	11 10 6	ditto
Fronfownog	51	11 3 6	ditto
Penycae (Fronfownog)	9	11 3 6	ditto
ditto	15	13 6 0	J. P. Eyton.
Talacre	100	13 7 0	Newton, Keates, & Co.
ditto	40	13 7 0	Walker, Parker, & Co,
Maesysafn	50	11 11 0	ditto
ditto	50	11 11 0	Newton, Keates, & Co.
Pantyffrith	25	13 10 0	Walker, Parker, & Co.
Llock Mine	25	12 9 0	ditto
Total tons	690.		

Sold at Aberystwith, on the 11th February.

Goginan	60	£16 5 0	Newton, Keates, & Co.

Sold in London.

Callington	42	£17 17 0	R. Michell & Son.
Tamar Mines	84	20 0 6	Tamar Company.

BLACK TIN.

Mine.	*Tons.*	*Price.*	*Purchasers.*
East Crowndale	10½	£50 12 6	J. H. Enthoven & Co.
ditto	1½	34 10 0	ditto
Lewis	10	53 15 0	Williams & Co.
ditto	2	46 10 0	ditto

COPPER ORES.

NO SALE on Thursday last, February 14.

LAST SALE.—Average Standard ......£110 6 0.—Average Produce...... 8¼

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—Devon Great Consols, Wheal Josiah, Wheal Maria, Wheal Fanny, and Wheal Anna Maria, 1320—West Caradon 286—Wheal Basset 235—Fowey Consols 229—Marke Valley 193—Wheal Friendship 159—Bedford United Mines 115—West Wheal Jewel 70—Holmbush 56—Phœnix Mines 51—Wheal Pink 49—Gonamena 33—East Downs 10.—2806 tons.

Copper ores for sale on Thursday week, at the Red Lion Hotel, Truro.—United Mines 1509—Wheal Comfort 423—South Caradon 304—Par Consols 258—Treleigh Consols 165—Tresavean 97—West Trethellan 36—Penpoll Regulus 36—Richards's Ore 16—Wheal Andrew 2.—Total, 2846 tons.

COPPER ORES

At SWANSEA, for sale Feb. 21.—Berehaven 116, ditto 114, ditto 102, ditto 100, ditto 98, ditto 79.—Cobre 110, ditto 101, ditto 77, ditto 67, ditto 63, ditto 5[illegible].—Santiago 68, ditto 62, ditto 58, ditto 57, ditto 43, ditto 38, ditto 9, ditto 8, ditto 6.—Cuba 65, ditto 55, ditto 48.—Guildford Slag 60.—Total quantity of ore to be sold, 1662 tons.

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of Jan. is 26—the quantity of coals consumed being 2504 tons lifting, in the aggregate, 23,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 53,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—We shall give the particulars next week.

MINING APPOINTMENTS FOR FEBRUARY.

16. Fowey, Prideaux Wood, and Treviskey—pay.
18. Condurrow—account, on the mine. Fowey Consols—sampling.
19. East Pool—account, on the mine.
20. North Roskear, North Pool, and other mines—sampling.
21. Ticketing at Redruth. Devon Consols, and other mines.
22. Balliswidden—setting and pay. North Pool—pay. East Crofty—setting.
23. Tresavean, Trethellan, Grambler, Seton, North Roskear, South Frances, Fowey Consols, Agar, Consols, United, Comfort, West Seton, West Wheal Buller, and Condurrow—pay. Levant—tribute pay.
25. Par Consols—sampling.
26. North Pool—account, on the mine.
27. Balleswidden and Spearne Consols—account. Carn Brea, &c.—sampling.
28. Ticketing at Lenderyou's Hotel, Truro. United and other mines.

NOTICES TO CORRESPONDENTS.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Could you, or some of your correspondents, inform me the rule for observations, and also measuring heights, by the aneroid barometer, in regard to the correction for temperature, and also the best rules for the same in the mercurial?—D. P.: *West Bromwich, Feb.* 11.——We forwarded this note to Mr. Negretti, who has favoured us with the following reply:—

SIR,—In answer to your correspondent, I beg to state that, at present, there are no corrections for temperature for the aneroid; but the rules observed for measuring heights by the mercurial barometers are, according to most authorities, as near as follows:—For the first 1000 ft., the barometer indicates a fall of about 1 inch, being 1-10th for every 100 feet; but it decreases in proportion to the elevation after the first mile, the fall of the mercury, supposing the temperature to have been stationary, would have been 5·33 inches; whereas the fall in the second mile would be only 4·38 in.; the temperature would decrease about 1° for every 350 ft. of ascent. In order to make the corrections for temperature, the relative capacity of the tube and cistern must be ascertained, and the dilatation of glass must be taken into consideration; but your correspondent had better consult a very carefully written work upon the mountain barometer, by Mr. Jones, the optician, Charing-cross, which will give him every information he requires.—H. NEGRETTI: *Halton-garden, Feb.* 15.

THE AMERICAN TARIFF.—The following was received too late to appear among our Original Correspondence:—"SIR: Without imputing impropriety to Mr. John Barclay, permit me to inform your readers, that the scale of charges, &c., showing the American ironmasters protection on pig and bar-iron under the present tariff, embodied in his letter in the *Mining Journal* of the 9th inst., was prepared by me in September last, at the request, and for the information, of some of the ironmasters here, and *not* with the intention of its being printed and circulated as an authenticated document.—HENRY FERGUSON: *Glasgow, Feb.* 14."

"N. S." (Moorgate-street).—The share being transferred, the holder becomes a member of the company.

"A Young Miner."—Purchase the *Glossary of Mining and Smelting Terms*, published at our office, and which can be obtained through any bookseller or newsman.

FIRE-PROOF BUILDINGS.—"A. M." (St. Ives).—The idea of constructing houses in such a manner as to avert the destructive influence of fire, is by no means modern. Upon Putney Heath, by the road side, stands an obelisk, to record the success of a discovery made in the last century, of the means of building a house which no ordinary application of ignited combustibles could be made to consume. The inventor was Mr. David Hartley, to whom the House of Commons voted 2500*l.*, to defray the expenses of the experimental building, which stood about 100 yards from the obelisk. In 1774, King George III. and Queen Charlotte took their breakfast in one of the rooms; while in the apartment beneath fires were lighted on the floor, and various inflammable materials were ignited, to attest that the rooms above were fire-proof. Hartley's secret lay in the floors being double, and there being interposed between the two boards sheets of laminated iron and copper, not thicker than tinfoil or stout paper, which rendered the floor air-tight, and thereby intercepted the ascent of the heated air; so that, although the inferior boards were actually charred, the metal prevented the combustion taking place in the upper flooring. Another experiment took place on the 110th anniversary of the great fire of London, when a patriotic Lord Mayor and the corporation of London witnessed the indestructible property of the structure. Yet the invention was never carried into further practice. The house was, many years after, converted into a tasteful villa, although the obelisk records the success of the experiment.

"T. B." (Westminster).—According to Sir Henry De la Beche, the hard and tough trappean rocks of South Devon and Cornwall form the best road material of the whole district, and some of them can scarcely be exceeded for their value in this respect. Greenstone has already been advantageously shipped as a road material from the Dart to London, and employed in some parts of the suburbs of the metropolis, the hard and tough greenstone of Treluswell being well calculated to resist the great wear of the streets of London. So tough and hard is this greenstone, that, though the material was acknowledged to be excellent, the commissioners of the neighbouring turnpike trusts were compelled to relinquish it, from the mere cost of breaking it—an objection which cannot be urged against its use in London. The principal stones used for Macadamising roads in London are blue Guernsey granite, which, tested by hydraulic pressure, will bear to the square inch a mean pressure of 18,912 lbs.; trap rock, 24,742 lbs.; horn blende rock, 20,736 lbs.; blue iron capel, 20,332 lbs. The large stones are denominated pitch stones, entered as an unmanufactured article, or in small quantities as samples; it is not specified in the tariff, and, consequently, comes under the head of unenumerated articles, paying an *ad valorem* duty of 10 per cent.

"J. H. M." (Worcester).—Cadmium has been admitted duty free, when entered.

"B." (King's Lynn).—Received, and shall be attended to.

We cannot publish any further letters about the affair at the Old Vitifer Mine, Dartmoor, without the writers' names being attached.

"A. R. B."—The most explanatory paper on the Cost-book System, descriptive of its principle and practice, appeared in the *Mining Journal* on the 13th October, 1849. Consult also Collier's *Treatise on the Law relating to Mines*, reviewed in the Journal on the 24th November and 1st December last.

"Tyro" (Preston).—Some particulars respecting Steam Electrical Machines will be given in our next Journal.

"F. B." (Bath).—We shall publish all the information we can procure. Can our correspondent assist us, by forwarding us an occasional communication?

"N." (Leith).—All the specifications for improvements in the electric light have been published in the *Mining Journal*, and we shall be happy to publish any particulars "N." may be enabled to furnish.

A. Linnet (Tavistock).—The "Ode to the Cock" is declined. If there be such dissatisfaction with the management of Wheal Anderton, why not endeavour to have a meeting convened, and examine into the cause? We have always been ready to publish the reports whenever furnished us, and their non-appearance is simply owing to their not being forwarded.—Where does the blame rest?

"Clio" (East Stoath) had better have nothing to do with the concern.

"J. E. S." (Plymouth).—We have received several letters this week, referring to the transaction at the Old Vitifer Mines; but we have determined to exclude all further reference to the matter.

"R. D." (Plumstead).—We do not know anything of the Cariggan Consolidated Tin Mines;—perhaps some correspondent will inform us whether the mines are at work, and where the office is, or where the directors, purser, or any leading party can be communicated with.

QUALITIES AND MIXTURES OF IRON.—*Errata:* In the article, in last week's Journal, referring to the evidence of Mr. Morries Sterling before the Strength of Iron Commission, the sentence should terminate at "strength of castings," in line 85 from top—omitting the following words. Again, line 100 should read, "The averages are taken from 18 bars of each kind: 42 bars of the toughened"—omitting "equal to."

Mr. Negretti's letter, with several others, must stand over.

THE GREAT PETER OF YORK.—"London, Lincoln, and Oxford, all boast of their mighty bells, but all must yield to the Great Peter. The large bell at St. Paul's cathedral weighs about 5 tons; the Great Tom of Lincoln about 5½ tons; and the Old Tom of Oxford about 7½ tons; but the Great Peter weighs no less than 12½ tons. The height of this monster bell is 7 ft. 2 in., and its thickness at the sounding curve is 7 inches: 17 tons of metal were melted for it, and were run into the mould in 7½ minutes. It took 14 days in cooling, before the clay mould was removed from it. The ornaments on the exterior of the bell are similar in style to many of the details of the cathedral, and an inscription round the top, in Lombardic characters, runs thus:—

In sanctæ et æternæ Trinitatis honorem
Pecunia sponte collata, Eboracenses
Faciendum curaverunt in usum
Ecclesiæ metrop. B. Petri, Ebor.

The enormous clapper for the bell was made at one of the Yorkshire ironworks. It weighs 4 cwt., and is beautifully worked in wrought-iron. The oaken stock in which the bell is fixed, with its bolts, weighs 3 tons. The bell is rung with two wheels, one on each side of the axle, 14 feet in diameter, and it is said 15 men are required to ring it. Its sound (in the key of F) is deep, mellow, and rich in the grandest degree. The citizens of York subscribed the fund for defraying the expense of this bell: it amounted to 2000*l.*"

*** We have been compelled to omit several leading articles, to make room for matters of more pressing interest.

*** It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, FEBRUARY 16, 1850.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

So *scire facias*, that great bugbear of patentees, has been defeated at last! An action in a *sci. fa.* has, for this once, terminated in favour of the patentee—thanks to the enlightened consideration of the Court of Exchequer and the special jury. As it will be seen, by the report of the Law Courts, Mr. LOWE and his screw-propeller have passed the dreadful trial unscathed, the verdict being in favour of the defendant (the patentee), thus upholding his patent against its assailants—this being the first action in *sci. fa.* as stated by the ATTORNEY-GENERAL, that has terminated in favour of the patentee. Proceedings in *scire facias*, it may be as well to state, are actions at law, carried on by a writ sued out of Chancery under that title, calling upon the patentee to show why his patent right should not be annulled for want of novelty or utility in the invention, or of any of the requisites of a valid patent. Though such proceedings have not been very frequently adopted, in consequence of the fact, that the party prosecuting on behalf of the Crown, is required to bear the costs of such prosecution, which are very large, and to guarantee his ability to do so; still whenever such proceedings have been carried out, they have invariably terminated fatally for the patentee.

The termination of LOWE'S case in his favour, is a most signal and unlooked for victory over *sci. fa.*; for in his case the principle of the invention, so to speak, was cut away from him, by the proof that parties had previously secured patents for screw propellers bearing much similarity to that of Mr. LOWE; in point of fact, he could not pretend to claim anything more than a modified form and arrangement of the screw;—the shaft working under water through a stuffing box, and accurately proportioning the length of the screw to its pitch; but the Court and jury had sufficient intelligence to see the justice of not viewing patent rights in the same light as formerly, by confounding them with objectionable monopolies, which the law denounces; they took rather the doctrine set forth in the letters patent, that the grant shall be construed most *favourably for the patentee*—not looking at the quantity invented, but at the improvement effected.

We think it is impossible not to see in the result of LOWE'S case—notwithstanding that the rights of the patentee have been maintained against his assailants—another proof of the imperfection of the present law of patents as regards the mode of adjudicating thereon. That every former case of this kind should have been decided against the patentee, and this of Mr. LOWE'S in his favour, is a remarkable fact, and can only be accounted for by observing that the nature and effects of this invention were of a simple and obvious character, not requiring much scientific or practical knowledge, in order to arrive at a proper decision; and thus the *ordinary special jury*, who are the arbiters in these cases, had a fair chance of coming to a true verdict; but in most cases scientific and practical knowledge is absolutely required to constitute an efficient arbiter upon the facts of novelty, utility, &c. The uninitiated jurymen, confused and bothered by a Prof. COWPER or Mr. COTTAM on the one side, and some equally eminent authorities on the other, frequently arrive at their verdict by some process analagous to "tossing up" for it. It is allowed in maritime cases that the Judges of the Admiralty Court have the assistance of the Brethren of the Trinity. Why should not the Judges of the superior courts decide patent cases, with the assistance of some scientific and practical parties; such for instance, as a Select Committee of the Institute of Civil Engineers, of the College of Chemistry, &c.

In another column we insert the particulars of the recent meeting of the EAST OF SCOTLAND MALLEABLE IRON COMPANY, setting forth its present position; and a communication from a correspondent enables us to give a brief history of the rise and progress of this unfortunate undertaking. In the middle of August last, it appears the present manager was introduced to the directors by an eminent ironmaster of South Staffordshire, and who, on taking the management, was sadly disappointed to find the works and affairs of the company in such an awkward position; like most other joint-stock companies, he found they had been sadly imposed upon in the outset, and their expenditure outrunning their receipts. Calls were made upon the shareholders in quick succession. The prospects of the trade being dull and gloomy, and no immediate probability of a return showing itself, the shareholders became soured, and refused to pay more calls, until some return of their investment was made them—some, indeed, wished for a dissolution, even before the works were so far complete as they now are; while others were disposed to go on, get into operation, and endeavour to obtain the large proceeds which had been held out to them as the result of their undertaking.

The year 1846 was characterised with a wild spirit of speculation, and this company appears to have been an offspring of that celebrated year. They set out with a proposed capital of 100,000*l.*, in 10,000 shares of 10*l.* each; 9928 of which shares were taken, and on part of them the full calls, to the extent of 7*l.* per share, have been paid; but a very small proportion only responded to the last call. Unfortunately, shares were allocated to individuals who really had not the means to pay beyond the first instalment; an infuriated mania possessed the promoters of it, and, having a certain object to serve, that of personal ambition, they appeared to be totally indifferent of ultimate results, and being ignorant of the trade themselves and also its requirements, were easily made a prey to others. The entire cost of the works is near upon 36,000*l.*, and astonishment has been many times expressed to the directors, that the outlay for such a place, and of such capabilities (they cannot produce more than 100 tons bar-iron weekly) should be so enormous, while it has been explained wherein a many thousand pounds might have been saved; they acknowledged it, and expressed their regret that the first board of directors should have been so awfully imposed upon. In justice to the present board, it must be admitted they have acted the part of honest men, and have evidently been actuated by a determination to extricate the concern from the difficulties in which they found it on taking office; for surely the conduct of some of the officials up to that period was anything but what it ought to have been. The opposition, however, on the part of the shareholders has acted against them; but, anxious for an opportunity of carrying out their designs, they prevailed upon the proprietors to continue operations, with the hope that better prices would have ruled ere this, and an encouragement been thereby afforded to the shareholders. Unfortunately their hopes have not been realised, and, it is feared, will not be for some time to come; for although a gradual firmness is setting in, still it will require a large amount of extraneous demand to send up prices to a remunerating pitch. In addition, however, to this drawback, the works are constructed upon a very bad principle, involving an *extra* cost in the manufacture of at least 15s. per ton. These defects have been pointed out to the directors, as also by means of "*facts* and figures," wherein 1*l.* per ton might be saved upon every ton of bar-iron produced, and this, too, for the mere outlay of 1000*l.* The directors see the practicability of it, and regret their position is such as to prohibit their availing themselves of the proposition. The time will come, however, when the property may be turned to good account; and the present intention of the shareholders will, if carried out, be a confirmation of the old adage—"What is one man's loss is another's gain." If the works are sold in the course of six months hence, an awful sacrifice must be submitted to. The locality of the works, though in many respects bad, is, nevertheless, very favourable for the *best* markets—inasmuch as the *easy* approach to the River Forth enables them to ship direct to the continent, to London, and other places of importance—an advantage which is not possessed by the makers in the west country—Dundyvan, Monkland, &c.; for *they* must incur an extra cost of freight of about 6s. per ton to enable them to reach the Forth, so as to gain access to the London and continental markets, whereas, from these works, it can be shipped at a small ratio.

CONTRACT FOR COALS.—The Commissioners of Greenwich Hospital have given notice that they will be ready, on Thursday, the 28th inst., to receive tenders for the supply of 2800 tons of Newcastle Wall's-End Hetton coals, to be properly screened, and of the best quality; the first supply to commence on or before the 1st April next, and 2000 to be delivered before the 30th June; the remaining 800 tons in the month of September.

SALE OF THE SURPLUS RAILWAY MATERIAL OF THE BLACKWALL COMPANY.—In consequence of this company having adopted the locomotive system, instead of working the line by ropes, by which a great saving has been derived to the shareholders, Messrs. Pullen and Son, of Fore-street, City brought the surplus material, steam-engines, plant, machinery, &c., to the hammer on Monday and Tuesday last. The sale created a great interest among those connected with engineering affairs, and was fully attended. The steam-engines were sold at 2400*l.*; the remainder, and other articles, tanks, &c., realised 5000*l.*

RAILWAYS IN SPAIN.—Great activity prevails in carrying out the projected lines, and the Government has granted several new concessions, which has given an impetus to mining adventures. A most favourable change is taking place in the Peninsula, which may, in a great measure, be attributed to the well working of the new tariff. In Biscaya, the forges are nearly all in full blast; several mines are being fitted up with steam machinery, which will enable the adventurers to carry out the workings on a more extensive scale, and at a moderate expenditure, when brought into full operation.

VENTILATION OF MINES.—In the House of Commons, on Tuesday evening, Mr. Wyld said he was anxious to know whether Government intended to introduce any measures this session for providing Government inspection, and for the regulation of ventilation in mines and collieries.—Sir G. Grey said that last year two inspectors were sent to the principal coal districts, it being thought desirable that full information should be had previous to legislation. He had lately heard from the gentleman who had visited the coal districts, and who was preparing a report on the modes of ventilation adopted in collieries, the casualties, their causes, and modes of prevention and remedy. He (Sir G. Grey) hoped soon to be in possession of that, as also one from the gentleman who had visited the southern districts. Until he had seen these reports, he did not think it expedient to prepare any Bill on the subject.—Mr. Wyld asked would the right hon. gentleman promise a Bill when he had received those reports?—Sir G. Grey hoped when had received them to be able to prepare a Bill founded on their suggestions.

TREATIES OF COMMERCE AND PATENT LAWS.

We alluded in our Journal, in the month of March last, to our patent laws, and now resume the subject for the sake of its great importance, and because it is likely to come under the consideration of Parliament in the present session. The first question that suggests itself is, whether the mode of remunerating inventors for useful discoveries by letters patent, is that which is most beneficial to the public *at the present day?* We say the public, because the public is the party who ought to be chiefly considered, and not the inventors, inasmuch as all private interest or protection, and the claims to public remuneration and reward, must succumb before the general interests of the whole community—a rule that is now being acted upon by reason of its truth and sound policy, and which, as it seems to us, there is a reasonable certainty of being much more extensively acted upon, according as circumstances arise to justify its further application.

If the mode of remunerating inventors by letters patent be *now* considered the most eligible, then the Act of the 21st Jac. I., cap, 3, is undoubtedly as good an Act for this purpose as any that could be devised, for it is not only most comprehensive, but is likewise clear, explicit, and intelligible. It *declares* that all monopolies are altogether contrary "to the laws of this realm, and so are and shall be utterly void and of none effect, and in nowise to be put in use or execution;" at the same time that it recognises the *lawful* prerogative of the Crown, by also declaring as follows:—"Provided nevertheless, and be it declared and enacted, that any declaration before-mentioned, shall not extend to any letters patent and grants of privilege for the term of 14 years *or under*, hereafter to be made, of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use, *so as also* they be not *contrary to law, nor mischievous to the State, by raising the price of commodities at home*, or *hurt of trade*, or *generally inconvenient.*" Nothing surely can be, in the shape of a law, more clearly enunciated than this is; it first declares what is not lawful, and then points out most distinctly and clearly the *condition* and *limitation* of those privileges and grants which can alone render letters patent, as such priviliges and grants, just and lawful. It thus protects trade and commerce on the one hand, and on the other sustains and propounds the due exercise of the prerogative of the Crown in the granting of letters patent, which, like every other prerogative, is controlled and regulated by the law. For ourselves, therefore, we are at a loss to discover what better Act could be framed on the subject of the law of patents, if this mode is still to continue that by which inventors are to be recompensed for their discoveries.

We will now proceed to the question proposed. Is the mode of remunerating inventors by letters patent beneficial to the public *at the present day?* Whatever of weight our own opinion may have, one thing is undeniable—viz.: that great doubts are now entertained by many practical men that it is not so; and why?—for the very good reason that the times of James I., and the times of our present excellent monarch, are totally different. That what was beneficial 200 years ago may not be so now, but may, on the contrary, be injurious; and is this too much to predicate in view of the astonishing improvements in the arts and sciences, in trade, manufactures, and commerce? We certainly think it is not, and without being very diffusive in our reasons for so thinking, we will advance one or two, which, in our opinion, are worthy of much consideration. What more clearly proves the great difference between the days of James I. and our own than the number of inventions at the two periods? In the former you may safely reckon by *units*, in the the latter by *hundreds*—nay, *thousands*; for at the present moment the product of inventions, during the last 14 years (patents for which are, consequently, now in force), cannot be much short of *five thousand*, and will certainly soon exceed this, at the rate at which letters patent are now being distributed. Can, we ask, an estimate like this be looked at without great doubts as to the advantages of such a system? Can it exist without "hurt of trade," of "raising the price of commodities at home," and, we may add, without being "*contrary to law*," since our trade and commerce are at this moment fettered with *five thousand* individual *monopolies*, granted, as a matter of course, without the least *previous investigation* as to the proof of their originality or public utility. Nor is the effect of these monopolies confined to our own domestic trade, in compelling the public to buy the patented articles of the patentees alone, if they think proper to supply them at all, *which is now entirely left to their option*, as well as the *price*, in case they choose to do so; for whilst we place ourselves under these immense disadvantages, we at the same time publish our improvements to our neighbours, who, during the *fourteen years* of our exclusion, have the full benefit of using and improving upon all our discoveries, without, of course, any restriction at all. In a word, if an invention is new and useful they use it—*we cannot*; if not new to them, but useful, they in this case use it too, but *we cannot.*

In submitting these remarks to our readers, we are merely considering the question as to the policy and expediency of the Patent Law at *the present day.* We would at all times as freely advocate the just and proper remuneration and reward of inventors, who we consider in the light of public benefactors, and to whom we are largely indebted, even beyond, in many instances, the benefits they may have derived under the present law, with the *operation* of which we know that very many have been greatly disappointed; and we are strongly inclined to believe that, after a due investigation of the merits of an invention, a pecuniary compensation, granted by commissioners appointed by the Legislature, would be not only more beneficial, as well as in every respect just, towards them, but would also prove to be what it is our duty to obtain—a much more advantageous mode to the country in general, and which, in our opinion, will appear to be the more reasonable, if we contrast the situation of a patentee with that of the author of a book, whose claims to a special remuneration are both founded on the same equitable principle. In the one case, the reward sought to be obtained is for something *which is merely stated* can be done, the truth of which, and the value of which, must *hereafter* be ascertained; whilst in the other (that of the author) the equivalent has actually already been given simultaneously with the benefit conferred.

As the subject of our remarks is one of the greatest import to the public, we invite the attention of our readers to consider it, and shall be ready to insert any communications thereon that may seem to us entitled to our notice, suggesting, in conclusion, that the following returns, if moved for by some Member of the House of Commons, would afford much useful information in this matter, which cannot be too closely examined into, or too cautiously decided upon. The returns we recommend are:—1. The number of patents at present existing.—2. The object of them, under general heads.—3. The number at present *in operation.*—4. The date of the first written *specification.* We intend to recur to the subject, upon which we have other remarks to offer.

THE DUTY ON TIN.—(*From a Correspondent.*)—A meeting of the manufacturers of tin-plates has been held, at which the expediency of taking immediate measures for obtaining a repeal of the duty on foreign tin was unanimously resolved upon. A memorial was adopted to the Board of Trade, setting forth cogent reasons in favour of the repeal of the import duty in question. We are glad to see that, amongst the parties who took an active share in the business of this meeting, were one or two who have hitherto distinguished themselves as the opponents of free trade. We congratulate them on their conversion, which has, no doubt, been effected by their interest in the tin question, on which it is natural to suppose, from their business associations, they must have sound opinions.

ANOTHER NEW LIGHT.—Notwithstanding the extensive sale of the "self-generating gas lamp," made some time since by Messrs. Holliday and Co., another has just made its appearance, which has been invented by Mr. T. K. Potter, also a Huddersfield man. The one now invented produces, we are told, a most brilliant flame, which, placed by the side of the ordinary gas, makes it appear very dull. It is free from smoke, smell, and the disagreeable noise made by all other portable gas lamps, and will burn 24 hours. It may be had as a stand lamp or chandelier, with any number of lights.

GREAT CENTRAL GAS CONSUMERS' COMPANY.—We announced in our last that this company's bill, for better supplying the City with gas, and other places adjacent, had complied with the standing orders. The capital proposed to be raised for the purpose is 250,000*l.*, in 25,000 shares, of 10*l.* each, with power to borrow 25,000*l.*; the price of gas to be limited to 4s. per 1000 cubic feet. The promoters propose to construct their works outside the City, and to convey their supplies of gas by mains and pipes laid down to the different localities. The Bill was read a first time in the House of Commons on Tuesday.

LONDON AND NORTH-WESTERN RAILWAY.—It is stated that during the year 1849, 381 articles, consisting of carpet-bags, wrappers, coats, umbrellas, and money, were returned by the 67 cabs employed at the Euston-square station. Of the articles returned, 115 were claimed by the owners, and the remainder have been deposited at the Excise-office, according to law. As a mark of the directors' approval, a gratuity was given to 12 of the cabman, who returned money paid to them in mistake.

Original Correspondence.

IMPROVEMENTS IN THE MANUFACTURE OF IRON.

SIR,—A very considerable improvement in the smelting of iron, as regards the consumption of fuel and saving of labour, is now being introduced into Staffordshire, which, unless I greatly mistake, will form an era in the manufacture of iron, equally marked with that of the introduction of heated air as blast. The improvement in question I found a few days since in active operation at the very interesting works of Messrs. Lloyd, Foster, and Co., at the Old Park, Wednesbury, who kindly permitted an inspection of the apparatus. It consists of the ingenious application of the gas, which has hitherto for a series of years been allowed to expend itself wastefully in the atmosphere, from the tops of the blast-furnaces, to the purpose of raising steam in the numerous boilers of the blast-engine, as well as for heating the air in the stoves for hot-blast. At these works they have two blast-furnaces, from the upper part of one of which the gas is conducted through a large pipe to the boilers, where it is ignited, producing abundant heat for the purpose required, and that in the most regular and beneficial manner. The supply, although not nearly the whole produced by one furnace, was working five large engine-boilers, and I am convinced that had the engine stack been more capacious, so as to draw down a larger quantity of gas, a much more extensive application of it might be effected, and greater results produced, for a considerable quantity was still escaping unemployed from the furnace. The introduction of it to the hot-air stove is cleverly managed by means of a small fan, which draws it down in excellent style, and with a regularity and volume which fully answers every expectation, keeping up the heat to the desired point with perfect regularity, and without the least difficulty They intend shortly introducing it to smiths' fires and moulders' stoves, for which it is well adapted; without doubt it may be extended to many other useful purposes. The adoption of it to boilers and hot-air stoves only, produces an immense saving in the expenses of iron-works, equal in fuel alone, in most cases, to a ton of coals for every ton of pig-iron made, besides saving all the trouble and expense of carting or wheeling away the ashes, as well as the labour of stokers, coal wheelers, &c.

Another advantage, by no means an inconsiderable one, was also pointed out in the very great regularity of raising the requisite supply of steam and heat, and the extended duration of the boilers and hot-blast pipes, in consequence of mildness and equal distribution of the heat. These most important and, at the same time, obvious advantages come under the notice of the public very opportunely, and will have a happy tendency in enabling iron-works to meet the exigency of the times, and to struggle against low prices. I am informed that many of the large works in Wales have also adopted the invention to a great extent.

London, Feb. 14. ——— A CONSTANT READER.

MR. PLANT'S IMPROVEMENTS IN MANUFACTURING IRON.

SIR,—In your paper of the 2d inst. is a letter from Mr. John Dainty, of Birmingham, recommending Mr. Plant's invention for the manufacture of wrought-iron, as the greatest improvement of the age,—which invention seems to consist in admitting steam into the puddling-furnaces. It is well known that the late Mr. F. Evans, forge and mill manager, at Dowlais, took out a patent, about 10 years ago, for this same invention, and worked it for some time. What, then, are Mr. Plant's claims, for which he is called upon to state his terms?

THOMAS JONES,
Llynvi Iron-Works, Feb. 12. ——— Forge and Mill Manager.

ON THE CRYSTALLIZATION OF IRON BY VIBRATION.

SIR,—About eight years ago, I had a cast-iron tilt-hammer at work, which was constantly breaking; I, therefore, forged one of the best, strongest, and toughest iron that could be got. This hammer worked exceedingly well for nearly 12 months, and did a great quantity of hard work—such as forging out drudging-machines, bucket-plates, &c. At the end of the above time it broke, with a perfect crystalline fracture, consequent upon violent percussion and vibration. I took the tail part of the broken hammer, and put a new head to it; this hammer was at work when I left the place, which was about two years afterwards; but I took the precaution, with the second hammer, every three or four months, to take it with a crane, and put it into a furnace, get it red-hot, and let it cool gradually with the furnace; this restored the fibres of the iron, and even altered the sound of the hammer. Query, would it not be well if railway axles were often annealed?

THOMAS JONES,
Llynvi Iron-Works, Feb. 12. ——— Forge and Mill Manager.

GASES IN THE BLAST-FURNACE.

SIR,—The exact and complete information on this subject which your correspondent, "F. C. W.," asks for, I should be very glad to receive myself. Numerous applications of these gases, with and without patents, have been made during the past 30 years; but, from uncertainties in the process, they appear never to have been persevered in. I have been at iron-works where the orifices in the blast-furnace had been stopped up, and at others where they were just going to be opened; and I have heard of works which puddled the whole yield of the furnaces by the combustion of their gas; but I never could find them. I have understood the gas from one furnace will produce a flame 100 ft. in length under an 8-ft. boiler; the economy of such an application is very soon calculated. I intended, last summer, to have visited Mr. Budd's works, to see the manner in which it is said to be so successfully applied; but I was disappointed in the intention. I met, however, his agent at another work, which he was preparing for the process; and, as far as I could learn, the patent right was based upon a *successful use*; and this, certainly, is often made a defensible ground. There have been patents, likewise, for the application of these wasted gases to roasting ore, to heating stoves, which is included in Mr. Budd's patent, and for melting iron in the foundry cupola; but they have never obtained general use. I think with "F. C. W.," that an accurate detailed account of all these experiments would be highly interesting and instructive. Can "F. C. W." give the *date* of the first use of these gases at the respective works he names?

DAVID MUSHET.
Feb. 12.

MANUFACTURE OF IRON.

SIR,—I have always stood in awe of Mr. Mushet's logical talent, being conscious of my own deficiency. I should have allowed his letter of the 5th inst. to pass unanswered, but as there is a very large class of readers (the great readers), who are but superficial observers, and who skim over words and sentences without giving themselves time to study their import, or how they bear upon any point in dispute, I must crave your indulgence to insert a reply, although it will be little more than a repetition of facts and circumstances which have already appeared; since, should Mr. Mushet's letter pass unnoticed, this class of readers would say he had beaten me in argument; and this, in the present state of the question, I am not disposed to admit. The difference in our opinions rests mainly on two points, and may properly be resolved into one. Mr. Mushet contends that the cinder in bar-iron is simply an oxide of iron, and that the atmosphere of the puddling-furnace has a decarbonising effect. My opinion is that cinder contains something more than oxide of iron, and that the effect of the puddling-furnace is not decarbonisation, but that, in fact, under some circumstances, it is quite the opposite. I will follow Mr. Mushet carefully through his letter, which will afford me an opportunity of explaining the circumstances which led me to entertain such opinions.

Mr. Mushet again brings out the cable bolts. He seems to think he has me fast in a trap with these; I must endeavour to set him right. I will take two bolts into consideration, supposing one to be pure simple metallic iron—the other a mixed fibrous cindery bolt. The iron itself, in both cases, is in the form in which it is to be used in the cable, with the exception of bending into an oval-shaped ring, and the two ends welded together. If an attempt was made to bend these cold, the pure iron will turn more freely than the other, because one of the characteristics of cinder is hardness and brittleness when cold. But heat the two bolts, and then the good working properties of cinder—pliability, adhesiveness, and tenacity—come into play, and the mixed bolt will be found to bend much more freely than the stiff, tough, pure metal. The same in welding; the former welding closely and firmly without any addition, while something must be added to the latter. I recommend charcoal dust, and thus, adding carbon to the oxidised surface of the iron, form a coating of carbo-oxide, to supply the welding principle. I will now suppose two entire cables finished and in use—one of bolts of pure iron, the other of mixed iron. The superiority of the simple pure metal is now demonstrated. Chain cables are exposed to a peculiar wear and tear, caused by alternate straining and jerking. This has no effect upon the pure metal, unless the strain becomes greater than iron is capable of bearing, when the iron of the chain will first stretch to its utmost limit, and then tear slowly asunder. In the other case the brittle cinder will be ground out, the fibres loosened, and the iron weakened, so that on a sudden jerk, or little extra strain, the cable will snap short off.

I must here repeat a former remark, that it is not merely a due and intimate admixture of cinder, but the constitution of that cinder, or alloy, which affects the quality of merchant bar-iron, and influences its working properties. What I understand by this description of iron is that which is entirely consumed by smiths in making articles of domestic utility, for agricultural and such like purposes. The iron manufacturer, in forging his iron, must consult the requirements of these customers, the sole consumers of the article, and not the ease and comfort of the men employed in manufacturing it. I have one notion in my head, that iron should be prepared in two distinct and opposite ways—one as just stated, to secure the custom of the blacksmith, by supplying him with an article which he likes, and which facilities his work by its pliability, adhesiveness, and tenacity; the other to produce pure metal for railway purposes, chain cables, sheets, &c., free from fibres, grains, or crystals, and without any intermixture of cinder, or alloy. My offspring has not yet seen the light, but I am looking for a produce of the pure iron breed, without any cross of the cinder in it, and expect it will be strong and healthy enough to take care of itself. My real object in manufacturing iron is to adapt it to the different uses to which it is destined to be applied.

I have the highest opinion of Mr. Mitchell's talent and acquirements, and feel, as I have no doubt the generality of the readers of the *Mining Journal* do, under great obligations to that gentleman for his valuable contributions; but I cannot, in the case in dispute relating to the puddling-furnace, surrender my judgment, formed after close attention to extensive operations, continued day after day, and week after week. After noticing small particles of coke, and of sawdust reduced to charcoal, remain unaltered in the puddling-furnace, and the surface of the tap cinder covered with the same, I cannot regard this tap cinder as merely an oxide of iron, nor suppose that the atmosphere of the furnace contained much of either free oxygen to consume carbon, nor of carbonic acid, to take it up and form carbonic oxide.

Mr. Mushet's allusion to water is a good hint. Sodium having a powerful attraction for oxygen would soon become soda. I can imagine two wells near the dwellings of a mining or manufacturing community—one the pure liquid, O 8 H 1 (this is the only bit of the atomic theory I can keep in my head), the other with a trace of sodium. How the thrifty housewives would flock to the latter on washing-days and at other times, for water to scour the house, &c.; while the children would be sent with a pitcher to the former for drinking water. These people would soon find out the difference, and be aware that the first was the purest water; but that the second, like cinder in iron with the smith, facilitates their work. This would be an instance of adulteration being an improvement in certain cases.—T. H. LEIGHTON: *Feb.* 11.

SPECULATION IN SCOTCH PIG-IRON.

SIR,—An article appears in your last Number headed as above, on which I beg permission to offer a few remarks. Your correspondent's communication will, I believe, prove of great service, if it leads to the conviction that the present price of iron is too high rather than too low, and, consequently, that a reduction, instead of an advance, may be looked for. But the bare assertion that such are the facts, will, I am persuaded, have very little weight, unless good and sound argument can be adduced in support of it; and at some early opportunity I may probably endeavour to lay fully before your readers such reasons as appear to me conclusive on the subject. At present, I would merely call attention—first, to the astounding fact, that in the face of a falling market, and continually increasing stock, the make of Scotch pig-iron, in the year 1849, has been 100,000 tons more than that of the previous year; and, second, to the deduction to be drawn from this fact—namely, that the business *must* have been a profitable one to the Scotch ironmasters on the whole, or such an increase would have been impossible.

Let us now turn to the position of the English and Welsh ironmasters, and inquire in which of the great districts of England, or Wales, have the ironmasters as a body been able in the past year to pay their expenses? I answer, without hesitation, in not one of those districts. Can this go on? Decidedly not. But Scotland can go on, and will do so, until her production reaches the maximum, and every acre of blackband is leased; before which time, it is highly probable the make of Scotch pig-iron will reach 1,000,000 tons per annum. Let the English and Welsh ironmasters consider this well before it is too late; and let their bankers and mortgagees also consider it, and look to their securities. There are other threatening clouds in the horizon, which bode no good to those whose capital is embarked in the manufacture of iron; but sufficient for the day is the evil thereof. I will, therefore, forbear to prophesy.

Feb. 12. ——— COSMOPOLITE.

THE LEAD TRADE.

SIR,—Observing in your paper of Saturday last that there is a considerable advance in the price of lead, and that the smelters or merchants are not anxious to execute orders at the present quotation, I have heard it stated that the United States of America are likely to require some 15,000 tons of pig-lead this spring from this country. I shall be glad to be informed, through your Journal, if such is the case, as I find that the annual production of pig-lead from the mines of Great Britain is only about 46,000 tons?—JOSEPH JONES: *Borough, Feb.* 13.

THE SALE OF WELSH MINING PROPERTY.

SIR,—Herewith you will receive hand-bill of sale of Welsh mine shares, in Chester, on Friday last, as well as conditions of sale. I send them with the view of preventing such unfair conditions being countenanced in future, such sales being wholly at variance with good management, the interest of mining generally, and a decoy to purchasers, as, under the conditions produced at the sale, the seller not only reserves to himself the floating, or working capital of the concern, but also the taking "the gilt from the gingerbread" by working the mine till the 7th April for his own benefit, and requiring possession of the mine for washing his ore till the middle of May, and perhaps other extension of time for washing his waste ore—indeed, no one can tell where the seller's claim will end; and, taking his dividend in April and July, instead of the purchaser doing so, and in addition to his purchase money to be paid on the 25th March next, he has to go to his pocket for another sum for floating, or working capital, as no part of the ore raised after the 7th of April will be in cash till the middle of June, leaving the April and May cost to be paid by the purchaser—a trap to lead capitalists into. This alludes to lots from 1 to 7, in the hand-bill, which bill says—"within the last few days, a new and considerable discovery has been made." Is it true, I wonder? purchasers see for yourselves. If the mine is in that improving state, why sell now instead of the 7th of April?—perhaps because the "gilt" is now on, and it may be gone by the 7th of April.

Precisely the same remarks will apply to lots from 6 to 37, compelling the purchaser to go to his pocket for floating, or working capital, to pay two months' cost, before his own ore can possibly be got into money. Waste ore, and a quantity of black-jack, or blend, at present, and may be for the next 10 years, unsaleable, reserved to the seller—the purchaser's agent, at his expense, left to look after the so-called property. A similar "dodge" was tried on shares in lot 2, in September last, although, as I understand it, without any intention on the part of the seller, the shares being the property of assignees, selling, at the same time, nearly 40 lots of landed and other property, the purchasers of the whole having possession on the 2d of February following. The profits to be fairly estimated, as I understand, from Sept. 25th to Feb. 2d, would not realise, on four shares, more than 300*l.*; but profits already divided on the four shares amount to from 400*l.* to 500*l.*; and, as I understand the matter, more than 100*l.* will be claimed out of the April dividend; but, it is said, their claim is likely to be disputed, as the returns must very considerably fall off after the end of March, if no new discovery is made. So much for conditions in selling mine shares.

Mining generally is a legitimate and fair investment for capital, but often spoiled in improper hands. To conclude, I must say, that the sale of this great and valuable property, under such conditions, very properly fell to the ground, and not a single lot was sold, and the sale of it, for a considerable time to come, much injured. The sale may truly be called a penny-wise and pound-foolish one. My object in writing this is to caution both sellers and buyers of mine shares against unfair conditions.

Flint, Feb. 12. AN OBSERVER.

[The following condition is the one more especially referred to by our correspondent:—

"That every purchaser shall, immediately after the sale, pay a deposit, in the proportion of 10*l.* for every 100*l.* of the purchase money and in part thereof, into the hands of Mr. Walker, the solicitor of the vendor, and sign an agreement for payment of the remainder on the 25th day of March next, at the office of the said Mr. Walker, at Chester, at which time and place the purchases are to be completed. And if, from any cause whatever, any purchase shall not be completed on the said 25th day of March next, the purchaser shall pay interest on the remainder of his purchase money, after the rate of 5*l.* per cent. per annum, from that day until the purchase shall be completed, and the purchaser shall be entitled to the profits of the lot or lots purchased by him, her, or them, to be calculated from the times following, that is to say, as to lot 1, from the 15th day of Feb. inst.; as to lots 2 to 6 inclusive, or any of them, from the 7th day of April next; as to lots 7 to 38 inclusive, or any of them, from the 10th day of Feb. inst.; and as to lot 39, from the 25th day of March next; but that the purchaser or purchasers shall not be entitled to the possession of the lot or lots so purchased by him, her, or them, until payment of the balance of the purchase money. The respective purchasers will be liable to the rents, royalties, and outgoings, and be at the risk of the lots purchased by him, her, or them, from the times following, that is to say, as to lot 1, from the said 15th day of Feb. inst.; as to lots 2 to 6 inclusive, or any of them, from the 7th day of April next; as to lots 7 to 38 inclusive, or any of them, from the 10th day of Feb. inst.; and as to lot 39, from the 25th day of March next. That the said purchasers shall take the lot or lots subject to any existing leases or agreements under which the different properties are held. That all rents, royalties, outgoings, and debts, payable in respect of the said lots, shall be borne and paid by the vendor until the respective times; from which times the purchasers shall be entitled to the profits thereof, as hereinbefore provided for."

PARTICULARS OF SALE.

One-fifteenth part of, or share in, the Holywell Level Lead Mine, held under various leases. In one lot.—Upset price, 30*l.*; highest bid, 80*l.*; no reserve mentioned.

5-28th shares of and in the Talacre Lead Mine, in the parish of Llanasa, Flint, held under leases for various periods. In five lots.—Upset price, 100*l.*; 200*l.* highest bid; 500*l.* reserve price.

76*l* shares (the whole being divided into 2208), of and in that most important undertaking, the Talargoch Lead Mines, Meliden and Dyserth, Flint. In lots of 25 shares.—Upset price, 1*l.*; highest bid, 5*l.* 5*s.*; reserve, 12*l.*; reduced afterwards to 8*l.*

8-30th shares in the Nant-y-Mwyn Lead Mine, situate near Meliden, Flint.—No bid.

The mines and minerals in, and under an estate situate in Holywell, Flint, and comprising about 37 a. 3 r. 34 p. of land, or thereabouts, now held by the Coleshill Colliery Company, under a lease, for a term of which fourteen years, or thereabouts, are unexpired, at the annual reserved rent of 40*l.*—No bid.]

DRAINAGE OF MINES.

SIR,—The following remarks have occurred to me from seeing the great difficulty in many of our Cornish mines, during the late very wet season to keep out the water, and in one mine with which I am connected it has been found impossible to do so. A considerable portion of the mine has, therefore, been inundated, and has, consequently, suspended the most important part of the operations—viz., the bottom levels. No doubt, most people who are acquainted with the Cornish pumping-engine are aware that the stroke in the cylinder is generally of much greater length than the stroke in the pump. This has been adopted, in order to carry out the principle of the expansion of steam, and has been carried so far as 12 feet stroke in the cylinder. Admitting that there may be a saving in fuel by having this long stroke, the disadvantages (if the stroke is much shorter in the pump), so far as regards the discharge of water, are rather prominent; for instance, suppose a steam-engine, employed to work a 16-in. pump (say) 150 fms. deep, and this engine should have a stroke of 12 ft. in the cylinder, and 9 ft. in the pump, 220 ft. per minute being the maximum speed for the piston of such engine to travel, gives just nine strokes per minute. Suppose, then, instead of this engine, one having a 9-ft. stroke in the cylinder, and the same in the pump, but with a little increase in the area of the cylinder, as a compensation for the loss of leverage in the beam, should be used, the number of strokes per minute would be 12·22 instead of 9. The great difference in the quantity of water discharged would, in some mines, be of great importance. But suppose no more water was required to be discharged than with the long stroke engine, then, owing to the increased number of strokes, a 13-in. pump, with all other pitwork to correspond, would be quite sufficient; and I think there can be little doubt that the less friction of the smaller pitwork would be an equivalent for the difference of the stroke in the cylinder, inasmuch as regards the economy of fuel. I hardly need remark that the saving effected in the pitwork, &c., by this arrangement, would be very great.

I would further remark that, supposing the stroke in the cylinder should be only 6 ft. instead of 9 ft., but with 9 ft. in the pump, the strokes would then be 18 per minute, and the pump only 11½ in. instead of 16 in. diameter. This arrangement might be more suitable for coal mines than for our tin and copper mines, but I think it is well worthy of an experiment in either, as the saving in the price of the engine, in the pitwork, and other things, would be very great. In the mine with which I am connected, and where the water has been too much for the engine, this engine works 10 ft. 3 in. stroke in the cylinder, and 7 feet 3 inches in the pump. The average number of strokes per minute for December last were 10, and number of gallons of water discharged per minute 730, and with all this the water rose several fathoms in the mine. If this engine was 9-ft. stroke in the cylinder, and 9 ft. in the pump, the number of strokes, allowing the piston to travel at the same rate, would be 11·38 per minute, and the number of gallons of water discharged per minute 1035. The effect of this would be, that the water would be regularly kept out of the mine, however wet the winter, and the operations of the mine carried on without hindrance throughout the year. There are other advantages connected with this mode of working, which I need not mention here, as, no doubt, they will be seen by all our engineers, mine managers, and others.

Redruth, Feb. 13. ——— JAMES SIMS.

THE MINING DISTRICT OF CARDIGANSHIRE.

SIR,—I believe that you will think that little apology is necessary for making any communication by which the public connected with mining are likely to be benefited. Under such a belief, I venture to make a few observations touching Mr. Evan Hopkins's visit to the mining district of Cardiganshire. I have had the pleasure of accompanying him underground, and over the surfaces of some of the mines in the neighbourhood, and of enjoying his practical and theoretical opinions upon them. How widely different is the subject treated under scientific and practical acquirements to the same thing in the hands of mere pretenders to science. From Mr. Hopkins, in the last few days, I have had the benefit of hearing difficult problems, with respect to the filling of metalliferous veins, demonstrated without effort, and the principles by which they are governed made clear to the understanding. I am anxious that this kind of knowledge should be duly appreciated; without it, mining is merely a hazardous game; with it, it becomes a profitable, simple, and certain business, and one of the utmost importance to the industrial, the monied, and the agricultural classes of this country. If those who are disposed to go into mining would wisely consult their own interests, by appealing to persons qualified to give advice, from having obtained knowledge from studying the laws of Nature in operation in the formation of metallic ores, we should be spared from hearing complaints at some future time of their having lost their capital in fruitless speculation in mines. It is astonishing that so many people allow themselves to be duped, when the means of preventing such occurrences are in their own hands. Mr. Hopkins has left this neighbourhood, and is gone to survey the eastern belt of the great mineral deposits of this district. I hope, although I understand his services are directed to the illustration of the properties of some grants for private parties, who have, as I think, wisely determined to avail themselves of his ability, in order to secure a just knowledge of the field of their investment, that the public will derive some benefit from his visit, and that he will occasionally throw out a light on the general structure of the country, the bearing of the channels of slate, their influence upon the lodes, and, perhaps, the most practical method of attacking and working them. I am aware that I have no right to ask, unremunerated (for the public), what is strictly private property, but disinterested actions are not always without their reward, more especially when used in so good a cause as the advancement of truth in difficult scientific inquiries, and in so interesting a question as hat of the lead and silver deposits in the old mining field of Cardiganshire.

Goginan, Feb. 13. ——— MATTHEW FRANCIS.

MINE REPORTS.

SIR,—I cannot refrain from making an observation on Capt. Spargo's report on the Bodmin Consols. This document evinces an unusual degree of practical knowledge of mineral ground, and shows very clearly that the writer understands the bearing of what he writes, on the structure and composition of rocks in connection with mineral veins. We frequently see reports highly embellished with geological and mining terms, which to the uninitiated appear to be of great value, and supposed to give a key to unlock the hidden subterranean treasures, when in reality they are of no more use to the mine in question than a printed form filled up to suit all mines. These kind of routine and unmeaning reports, unfortunately, are often commented upon in high terms, and thus tend to increase the evils complained of in mining, whilst the truly useful and practical reports, coming from such men as Capt. Spargo, are too often neglected. I do not wish to enter into the merits of the Bodmin Consols, but simply give a hint to Capt. Spargo to watch the changes in the westerly dip, the dip of the western branches, &c., and the cross-heads of the footwall; much de-

pends on these important points, for making shoots of ore, as well as the western channels of pale green slate. I watch Wheal Sarah deeper level going south with great interest; if the lode continues moderately narrow, and not widen into numerous branches, I expect a good shoot of ore dipping south a few fathoms further, especially if the footwall and underlay continue as above.—EVAN HOPKINS: *Aberystwith, Feb.* 11.

ON THE PRESENCE OF SILVER IN MINERALS AND ROCKS, AND THE MEANS TO BE EMPLOYED FOR ITS EXTRACTION.

SIR,—Messieurs Malaguti and Durocher's memoir to the Academy of Sciences, at Paris, in 1847, communicated facts well known to myself many years—viz.: that silver often exists not only in many sulphurets and in veins, but it has been also found in rocks where mineral veins do not exist. The chloritic slate rocks of the Andes, in South America, in Mexico, in Wales, on the continent, and many other places I could mention, contain silver, some scarcely perceptible, others containing from 5 to 15 ozs. per ton in a state of dissemination. When silver is found in such a minute state of dissemination, it cannot be concentrated by water, it can only be extracted by chemical means, by the aid of sulphur, and common salt, &c. When it is combined with sulphuretted metals, especially zinc, antimony, &c., a large amount would be lost by calcination, if not mixed with other elements to effect double decomposition. I cannot see any advantage in using the chloride of lime, nor in the use of ammonia and hyposulphite of soda, as recommended by Dr. Percy and others. Common salt serves the purpose of the former, and as we can obtain the silver by metallic precipitants, we do not require to dissolve the chloride of silver. It is to be hoped the Camborne Consols will have a bunch large enough of the argentiferous copper, to warrant the putting up of reduction works. I recommend them to take Mr. Ennor's advice to avoid water and smoke; they are very treachorous agents in the treatment of silver ores. Dry system of dressing to a low standard, and cheap mode of final reduction, are the only means of rendering ordinary silver ores of moderate value profitable, as justly observed by your intelligent correspondent, Mr. Ennor.

Aberystwith, Feb. 12. EVAN HOPKINS.

NAMES OF MINES.

SIR,—I have frequently observed that, upon a new company of adventurers taking a mine, they have given it a new name, for which no sufficient reason can be assigned, unless the old name was disagreeable in sound. An inconvenience results from such a change, in the ignorance which must at first be experienced by persons at a distance concerning the situation of such a mine. Hence I see no reason why the well-known name of South Roskear Mine should be dropped, and the sett itself cut up—one part being nick-named Pendarves Consols, and the other part, Gustavus Mines. The new names are not so impressive as the old—the land, principally, being called Roskear, and the mine contiguous being called North Roskear. But there is a reason still more cogent why, in the present case, the name Pendarves Consols should not be applied, because it is inconvenient to have two mines, particularly in the same district, with names alike, or nearly so. Now, there is a mine a little westward of the Roskears called Pendarves and St. Aubyn Consols, lately set to work by Mr. Reynolds, of Pulstrong, Camborne (by-the-bye, a very valuable sett, if reports be true) —that is the name on the leases which were drawn up before the late sale of South Roskear. I would, therefore, humbly submit that the managers of South Roskear Mine had better retain the old and well-known name of that sett, or setts.—R. SYMONS: *Truro, Feb.* 13.

ILLOGAN AND CAMBORNE DISTRICT.

SIR,—To any person who takes an interest in mining, the present productive character of this district must furnish a high degree of pleasure. I state my conviction that no district of equal value is yet known in the world. There is not a mine at work in the district which does not leave a profit, or is likely to do so. It is steadily *improving*, and I am happy to announce to you, a friend of mining, that several old mines are about to be re-wrought. I subjoin a list of the mines in this district, the whole of which will be comprised in my map of it, which is nearly ready for the lithographer:—

Carn Brea	West Tolgus
Tincroft	South Tolgus
Cook's Kitchen	Wheal Uny
Dolcoath	Wheal Union
Stray Park	West Buller
Tryphena	Wheal Basset
Pendarves and St. Aubyn Consols	North Basset
Trevoole	South Carn Brea
Gernick	South Frances
Copper Hill	West Basset
West Stray Park	West Frances
West Seton	Wheal Grenville
Wheal Seton	Condurrow
North Roskear	Tolcarne
South Roskear	Bolenowe
Camborne Consols	West Tresavean
East Wheal Crofty	South Condurrow
East Pool	Wheal Harriet
Wheal Agar	Carn Camborne
North Pool	Wheal Tehidy

Truro, Feb. 13. R. SYMONS.

CORONERS' INQUESTS ON DEATHS IN MINES.

We must not make a scarecrow of the law,
Setting it up to fear the birds of prey,
And let it keep one shape, 'till custom make it
Their perch, and not their terror.

SIR,—Your correspondent, Mr. David Mushet, appears thoroughly dissatisfied with the attempts which have been made to direct the attention of the Legislature to the existing condition of the mining population, and not only refuses to give his adhesion to Government interference, but will not credit that "many men of sound views have altered their opinions" on this subject. With this determination, it may be useless to contend, or attempt to disprove the facts adduced in support of it. Your correspondent has an undoubted right to please himself as to what he will or will not believe, but he is certainly not justified in attacking the characters, and impugning the motives, of those who may differ with him in opinion on this, or any other subject of public interest. Such a course is neither creditable nor necessary, and on reflection can give no satisfaction to a "sound" and well-regulated mind.

Without further notice of this topic, there is a subject introduced, near the conclusion of the communication, which demands public attention, and which has not, hitherto, been brought forward so prominently as its importance deserves. Mr. Mushet admits the inefficiency of the coroners' inquests, and says, "I believe that something might be done by establishing a *more stringent* system of inquests upon these kind of accidents." It is satisfactory to find that on this subject, at least, those who are in favour of Government interference will have the assistance of your able correspondent, in advocating the necessity there is to remodel this ancient institution. The design and constitution of coroners' inquests are excellent, but have suffered in practical value by the changes in society, caused by the lapse of time, and the different circumstances consequent upon those changes. Whoever has attentively watched the mode in which the law is administered by these courts, in cases where violent deaths have happened in mines, must be convinced of their inutility as a means of investigation, and for the administration of the law. In relation to this subject, one of the coroners for Glamorgan, a gentleman of high respectability and great experience, says (in his evidence before the Children's Employment Commissioners)—"The mode of conducting inquests, as at present, is more injurious than useful—the proprietors and culprits escape." We have only to refer to the thousands who have been killed in the mines during the last few years, and to the almost invariable verdict of "accidental death" which has been returned by these juries, to be satisfied of the worse than inutility of these courts, as at present conducted, and that the direct consequence of this mode of administering the law is to confer impunity on offenders. The well-known, and universally admitted fact, that ordinary precautions for the prevention of fatal accidents are neglected, renders it impossible to believe that such verdicts are in accordance with truth. If an explosion occurs, and it be proved in evidence that no artificial means have been resorted to, in order to improve the ventilation, or that the means adopted were imperfect—if a chain or rope breaks whilst men are on it descending or ascending a shaft, and no means are used to prevent the fatality of such accidents—if the roof falls and crushes to death the men beneath it, owing to the insufficient supply of timber for props—if water breaks into the mine and drowns the colliers, from incautiously approaching too near the old workings, the sea, or rivers, owing to the non-existence of plans,—in all such cases coroners' juries have recorded verdicts of "accidental death;" thus relieving the parties implicated from all legal responsibility, nd all incentives for the exercise of greater care in future. It is no wonder that, under such circumstances, there should be such a general indisposition among the owners and managers of mines to expend money, by adopting improved measures of precaution, and to content themselves with mere hopes that accidents will not happen or recur in their mines, even although they neglect acknowledged means of prevention.

There is no doubt as to the applicability of the existing penal laws to offences of this description, although they are capable of being advantageously increased and modified. The evils complained of are, therefore, attributable to other causes, which may, probably, be found in the constitution of the court, and the modes of its procedure.

Neath, Feb. 12. J. RICHARDSON, C.E.

IGNITION OF FIRE-DAMP IN MINES.

SIR,—M. Jullion's communication in your Journal of the 26th ult. appears to have been written hastily, and under the influence of considerable misapprehension, both as relates to Mr. Baggs's invention, and of the subject generally. Dr. Murray has proved "the use of galvanism for the ignition of explosive gases in mines" is no new method, but was proposed several years ago; attempts to clear mines of fire-damp by ignition were made at least 30 years since by other methods. A patent was obtained by Mr. William Wood, of Newcastle-upon-Tyne, in 1826, for "an apparatus for the explosion of fire-damp in coal mines," its chief recommendation being that, by superseding the dangerous process then occasionally resorted to, many disastrous accidents would be prevented. The apparatus "consisted of a common Dutch striking clock, in which the descent of a weight at a previously determined hour raises a lever, which, by means of another lever, causes a match, charged with the oxymuriate of potash, to be dipped into a bottle containing sulphuric acid; and a counterbalance weight on the first lever immediately afterwards draws the match out of the bottle, when the contact of air causes ignition to the match, to which a train of combustible matter is connected, by which all the inflammable gas is destroyed."

Without discussing the respective merits of the several ingenious plans for voluntarily igniting fire-damp, it may, perhaps, be of some use briefly to revert to the object of them, and to inquire of the projectors what benefits they anticipate will result from the ignition of the fire-damp, and by what means they propose to limit the effects of such explosions, so as to leave the "air stoppings," "brattices," &c., uninjured? Supposing that this can always be effected, how do they mean to dispose of the deadly after-damp, the product of "the ignition?" Doubtless recourse must be had to some means of effective ventilation, which, as the after-damp is of about twice the specific gravity of the fire-damp, would have been more wisely employed in diluting, or clearing, the mine of the explosive gases.

Neath, Feb. 11. J. RICHARDSON, C.E.

SIR JOHN HERSCHELL'S PROPOSED PLAN FOR THE FORMATION OF ICE.

SIR,—Sir John F. W. Herschell's suggested method for the formation of ice, reminds me of a plan I had, many years ago, proposed for the production of *snow*, at any time, even in summer or autumn. Atmospheric air was, by a condensing pump, forced through water, and the *mingled air and water* were, by the opening of a stop-cock, allowed to rush suddenly out through a sponge or rose, and expand. The principle is illustrated by the formation of snow, &c., in a mine at Chemnitz, in Hungary, and the solidification of liquid carbonic acid, when it escapes from an orifice, and is allowed suddenly to expand. J. MURRAY.

Portland-place, Hull, Feb. 7.

VENTILATION.

SIR,—I frankly confess I have never yet met with anything in the shape of ventilation on shipboard. The recent case of the emigrant ship, *Robert Burton*, Captain Decan, is a very painful proof of the ignorance that prevails in such cases. *Twenty-six passengers* perished, out of 150, on the voyage from Liverpool to Philadelphia! The catastrophe is unanimously admitted to have been entirely caused from the absence of all ventilation, for there was no infectious disease whatever on board. In this enlightened (?) age,—

Can such things o'ercome us, like a summer cloud,
Without our special wonder?

I am sorry to be compelled to confess that the great mass of the community are as deaf and indifferent to the voice of science as the earless adder. Crowds will congregate at "recitations," or "readings" from Shakespere, and the "daughters of music" will wend their way in numbers to the concert or the oratorio, while the arena where Science enunciates her useful and important truths is deserted, as if the public had "neither part nor lot" in that which constitutes the enduring glory of a nation.

Portland-place, Hull, Feb. 7. J. MURRAY.

THE ANEROID.

SIR,—I think it will be prudent now to terminate the controversy touching the aneroid. I am sorry that I have been the unintentional cause of provoking the hostility of Mr. Negretti against what I must still assume is an elegant and ingenious instrument, and constructed, as I believe, on a sound principle, which Mr. Negretti is pleased, however, to call a mere "toy;" and allow me to say, that it is a most unwarrantable and gratuitous assumption on the part of Mr. Negretti to say, that M. Vidi "requires 25 days to perfect" an aneroid, "in order to come over and prove the fact" of its excellence.

"He that's convinced against his will,
Is of the same opinion still."

So sayeth Sir Hudibras. I am not aware that I have ever said one word that could be supposed, even by implication, to favour an idea that I denied the porosity of metals, the experiment that was made in reference to the question of the compressibility of water, wherein the water was forced through a sphere of gold, and studded its surface like drops of dew, was quite sufficient evidence; but enormous, in this case, was the force of compression. The pressure of the atmosphere cannot be supposed to affect the metallic membrane of the aneroid in any appreciable measure, as far as the question of porosity goes. In the case of Gordon's portable gas-lamp, the sphere of metal has sustained *unimpaired*, for a sufficiently lengthened period, a pressure of *eighty atmospheres!* J. MURRAY.

Portland-place, Hull, Feb. 7.

P.S.—I *have made*, in conjunction with the late Dr. Ritchie, experiments with the torricellian vacuum on the radiation of carbonic air in a sphere of iron, in disproof of the late Sir John Leslie's theory.

HOT AIR v. HIGH-PRESSURE STEAM.

SIR,—I am quite ready to admit that Mr. Craddock's last letter contains much good sense and sound argument; nor am I disposed or prepared to gainsay his assertion, that with reference to his inventions, I shall not find another instance since the time of Watt in which so much really original improvement has been added to the steam-engine. Still I must candidly aver, that *in the present state of practical science*, and under the present system of generating steam, and applying its powers to the movement of machinery, I am far from being a convert to the general employment of steam at so high a pressure as 100 or 200 lbs. to the square inch. Mr. Craddock says, that I have addressed myself to the prejudices of your readers by referring to the American system, and citing Mr. Stevenson on the sharp sound produced in the escape pipe; and he says, that in the system he proposes, one chief peculiarity is to exhaust the steam of such force as is the cause of this sharp sound. Now, Mr. Craddock knows very well that the danger lies not in the *sound*, but *in the steam pressure* which causes it; and if this latter is gradually lowered, and exhausted by the expansion which takes place in the cylinders, it is, at all events, *constant in the boiler*, wherein lies the principal source of mischief. But Mr. Craddock says, with reference to this point, that "it is a fact which every school-boy ought to know, that the force which tends to rend a boiler asunder, is as much dependant upon the number of square inches in the surface, which encompasses the sectional area of any part of the boiler, as upon the number of pounds pressure per square inch." True! no school-boy is expected to deny this position; but grown-up men, who are no school-boys, may, perhaps, be permitted to doubt the correctness of inferences drawn from this fact, if they see these inferences are at variance with the results of experience. Mr. Craddock, resting upon this *fact*, proposes to dispense with boilers 3 or 4 in. diameter, and to substitute tubes of 2½ or 3 in. The substitution is sufficiently easy; and the high pressure alluded to may thus be held in check.

This is unquestionable. But what does practice say concerning these tubular boilers. How many have been invented already? How many are now in actual use? I mean the real "tubulars," where the tubes contain water and steam, and not where they are used, as in the locomotive boiler, for the passage of hot air and flame to the chimney; for where they are so employed they must necessarily be embraced by a circumferential iron belt of large diameter, capable itself of withstanding the highest pressure to which the steam is to be subject. I have no doubt that many Mr. Craddock's improvements in the steam-engine are what he repo them to be—good; but he must excuse me if, in the absence of furth explanation than I have yet received, I am still dubious as to the advisabil of employing steam of such extreme pressure as 100 or 200 lbs. to t inch. With regard to Mr. Weston's remarks upon the same subject, I w endeavour to be as brief as possible. He says that I have first misquote and then misrepresented him. I am very sorry if I have mistaken h meaning, but it is really no fault of mine. Half his argument is a ridd to me, which I am obliged to decipher as well as I can. If he is not mo precise in the declaration of his views, "Engineers of the next Generation, in conning over his writings, will certainly mistake him for a professe propounder of enigmas—a modern incarnation of the Sphinx. His co rected estimate for mean pressure, under the circumstances referred t differs not from mine, but from Bourne's. To this author's *Treatise o the Steam-Engine*, p. 94, therefore, I refer him. ISHAM BAGGS.

Feb. 12.

NORTH BRITISH AUSTRALASIAN COMPANY.

SIR,—I observe, in a New Zealand paper I have just received, that th estimated monthly produce of regulus from the furnaces at Kaw-aw i 130 tons, of 30 per cent. This would be 1560 tons per annum, and, a the present high standard of copper ore, would fetch about 25*l.* per ton, o 39,000*l.*; and allowing even one-third of this to be profit—namely, 13,000 —it would take two years to pay off the company's debt, and nearly thre years from this time before a dividend could be paid. But this view of th case, under the present management, is a very sanguine one, while th average price of copper will not likely remain so high; and the writer o the paragraph in the Auckland paper observes—"Probably, those con cerned are far too sanguine, both as to per centage of metal and quantity of regulus." It is a great pity to see so valuable a property in this con dition; and I am persuaded that, were it managed as all similar adven tures are, the results would be far more satisfactory.

London, Feb. 14. J. H. MURCHISON.

WHAT IS, AND WHAT IS NOT, THE COST-BOOK SYSTEM.

SIR,—I have somewhere read of a certain animal whose pride induce him to dress himself in the skin of a lion; but the more he strutted and attempted to imitate the "roar" of the forest king, the more he expose the length of his natural ears; and your correspondent, "A Shareholder" (without for one moment comparing him with any other animal than a *well-bred finished gentleman*, as evidenced by the style and language of hi last letter), shows clearly enough the nature of his own profession, and that he is more *interested* in supporting the plans of the West Polgooth Company than I can possibly be in denouncing them. As a public writer known to you, Sir, and to the public, for many years, I can treat with the most utter contempt the imputation of motives of self-interest which, by a side-wind, "A Shareholder" attempts to cast upon me; and I only degrade myself by referring to them at all to show the miserable shifts to which he is reduced. Unable to answer my letters, he descends to personality, and makes insinuations against others which have no foundation in truth.

I wrote you in the first instance, as I have said before, upon public grounds, because I considered the plans adopted by certain parties were calculated to deceive. "A Shareholder" entered the lists, and held up the West Polgooth as a pattern for model improvements; and I showed, to the best of my judgment, that his improvements were open to great abuses; and that, as the legitimate Cost-Book System was simple in itself, safe in its principles, and offered the greatest security to the shareholders, any new plans which admitted the *possibility* of abuses "were not improvements, but deceptive innovations."

That the public agree with me in my views, I have reason to *know*, not only from the numerous communications privately sent to me, but from others sent through your own hands. I enumerated *several* objections to the new system; but your correspondent, lawyer-like, sticks to one only; and that being a legal quibble, I allowed him to understand better than myself. "A Shareholder" started an objection to puffing prospectuses. When I show the nature of the West Polgooth, he is silent, hugs his legal point, and *attempts* to be personal. Why, Sir, I have purposely abstained from dragging into the controversy the contents of the West Polgooth prospectus, because I wished the question at issue to be discussed on its general and public merits. What would have been more easy for me than to have shown the *interest* of certain parties in it? or, had I wished to distract the attention of your readers, by amusing them with extraneous matter, and which could have no bearing on the case, how easy to have enlivened them with pleasing, if not instructive, tales—such as "Wise-Saws and Plane-Dealing of a Model Carpenter," excite their sympathies with "Slopperton, or the History of a Miner's Shirt," and instruct the young and aspiring with "The Modern Whittington, or the Progress of Ambition." To return, however, to "A Shareholder's" letter; he says—"I think the public have a right to be informed of the *motives* which must have induced 'Argus' to have entered the field from which he is obliged to retreat so *ignominiously*." [Rather a hard word this for so gentlemanly a man as "A Shareholder," especially when, so far from having *retreated*, I have scarcely begun yet; and, as an old fox-hunter, I beg to say, I never yet entered a field, and left it ignominiously; I never lose sight of a fox till he is killed, or run to earth. I promise "A Shareholder" that, when time will admit of my going into the matter of the West Polgooth prospectus thoroughly, he shall have no reason to *ask* who I am.] He then informs the public that there is a class of men, called sharebrokers, whose dealings would be circumscribed if the contract note system were adopted; and, therefore, these brokers have, as he says, from interested motives, set their faces against the system, and done all in their power to injure it.

SIR, I am told, and believe, nothing can be more contrary to the fact than this whole statement of your correspondent, though it is well got up, to injure a class of men who have more onerous duties to perform than is generally imagined, and which "A Shareholder" is either ignorant of, or wilfully conceals. I understand that, during the old scrip system, a great many persons speculated in mines who will not do so now, and for reasons which are thus explained: many persons in trade, thinking it might be injurious to their credit were it known they dabbled in any kind of speculation, could purchase scrip through their agents, and hold them without their names transpiring; but when scrip were abolished by law, these parties ceased, in a great measure, becoming speculators, not wishing to have their names on transfers. Were it, therefore, put to the vote among the brokers, I am assured that scrip, against the trouble and expense of transfer, would be carried by a large majority. It is plain, therefore, interest has nothing to do with the opposition to the West Polgooth Company by the brokers.

The duties and responsibilities of London mining *agents* (or brokers, as he calls them) are not to be put into comparison with stock or shipping brokers. The mining interest is now chiefly centred in large capitalists, who having no time to attend to mining affairs, or, perhaps, not understanding them if they had, entrust everything to their "agents," who are expected to have correspondents in all the mining districts, to keep a constant watch on their clients' interest, to keep them *clear of liabilities*, and on no account to recommend to them any speculation which will not bear the strictest investigation. Speculative as mining is, the anxiety on all these points is of no small amount; and no agent can hope to maintain his ground unless he exercises the greatest caution and prudence in selecting new investments. That I am describing correctly the duties of a mining agent, and the way in which it is generally performed, your correspondent may learn (if he doubts it) of many capitalists in the City, and it is clear that only through such agents can new projects be introduced to *the large mine-holders*. The West Polgooth Company, I am informed, offered large commissions to the brokers to introduce this mine to their clients; but, almost without an exception, they refused to do it, *unless brought out in a fair and legitimate manner*. So much, then, for the *interested* motives of brokers, and the unhandsome insinuations made against them by "A Shareholder." And, to my thinking, they deserve credit, rather than censure, for their conduct; for when they see parties comparatively (I might say, *entirely*) unknown, as mining men, introducing new plans and innovations upon customs established upon sound principles, and by practical and experienced men, it becomes their duty towards those who have confidence in them to act as they have done, and to expose the extraordinary statements set forth in the West Polgooth prospectus. I question if there be any profession requiring more careful thought, more practical knowledge, or more experience, than the *good* management of an extensive mine; but too many forget the old adage, *ne sutor ultra crepidam*, think they can accomplish anything and everything, and expose the grossest ignorance at starting. Let us suppose, for an instant, that I, "Argus," am a trades-

man in the city of London; I notice with regret, and also with one of my hundred eyes pointed towards my own individual interest, that many of the public wear indifferent shirts, and I, therefore, resolve to introduce an improvement upon the principle of shirt-making in general; now, should I, do you suppose, send to Billingsgate Market for a fish-woman to cut out my shirt on the "improved" principle, and to the man who sweeps the crossing to estimate its exact cost, and thus run the chance of giving to my customers a miserable abortion? or should I rather go to the first cutters-out and makers in the trade, and introduce to my friends something that would please them, and do myself credit as a respectable tradesman? Again, let us say that I, "Argus," am a ship-broker; I have many friends with ships trading to different parts of the world, who pay me a brokerage for finding them goods and passengers; and I have also an extensive connexion who pay me commissions to find ships for themselves, as passengers, and for their goods, as freight; now, at the present moment, let us suppose that I have 50 clients anxious to transport themselves to some distant land —say, California: well, I see an advertisement, that the good ship, *Von Homborg*, A 1, copper-bottomed, fastened, and all the rest of it, will start for San Francisco on such a day, sailing on new and *improved principles*, which shall secure the safety of the passengers, and do away with all the inconvenience of a sea voyage. I am struck with this advertisement, and inquire into the matter; I find that the improved system of navigation is a deception, and the ship, *Von Homborg, is not commanded by a single seaman*. Now, should I, as an honest man, expose what I know concerning *Von Homborg*, or induce my friends to embark in the ship? If, as a young man dependent upon my business for present and future subsistence, I were to do the latter for the sake of a little extra commission, what would the public think of me?—what should I think of myself? If, on the other hand, I exposed the ship and its crew, I should consider their abuse as the highest praise, and feel highly amused at such a defence as this—"It is a well-known fact that many vessels have been wrecked on their voyage to San Francisco; and, therefore, it is clear the system of navigation is not perfect; the ship, *Von Homborg*, is started upon improved principles of navigation, and the projectors venture to affirm she shall rub against Cape Horn without injuring her sides, or inconveniencing her passengers." Is there not some analogy between *Von Homborg* and some of the new mining companies?

Your correspondent further says—"Notwithstanding the opposition of 'Argus,' the work goes bravely on," and "the improvements will be generally adopted." When your correspondent wrote this, was he ignorant that a director, and the only one (saving himself, as a matter of course) of pretensions to any great standing in society, had given orders to withdraw his name from the company? and will your correspondent undertake to return the money to those parties who may repent having been induced to take shares, if there be any such?

The last paragraph of "A Shareholder's" letter is a lawyer's all over, and he who "runs may read it"—as for understanding it, it is another thing. He says, if "Argus" enters into an agreement with A, to become a partner *at a future time, on paying a certain sum*, will A become responsible for "Argus's" debts *until that future time?* What has this to do with the question? The prospectus I condemned, put forth to the public that there would be "no calls, no liabilities," and it was upon this I took my principal stand, as being a deceptive statement. "A Shareholder" now, by his own words, owns liabilities would come, but "*not till that future time*"—that is to say, when the note-holders were firmly hooked.

"A Shareholder" now takes his leave of "Argus." I am sorry for it. I had hoped, as he has ungenerously imputed to me unworthy motives, that he would have answered a few questions, to show, at least, how *disinterested* a person he has been. He states that the company still goes on upon the "*improvement* system." How is it that, from an advertisement in your Journal, the public are not informed of this, but are told it is "*conducted on the Cost-book System?*" Is this candid?

Your correspondent once blamed me for using the word shareholder; he said there were no shareholders, the *directors* being the only registered parties. May I ask how it is he signs himself "A Shareholder?" May I use a common logical deduction, and "guess," as the Yankees say, that he is himself a "director?" Again, the original prospectus states—"The mine, with its machinery, has been purchased by the present directors, the purchase money for which will be taken up in shares." Will "A Shareholder" state the amount paid for "the mine, *with its machinery*," and also the amount to be charged to the "contract note-holders," as the prospectus is somewhat oblivious on this point. I would not, for one moment, insinuate that there is the slightest difference in the amount paid and that charged; and if there be, it is clear, if parties buy a thing cheap, they have a right, if they can, to make the most of it; but when we come to test "interested motives," pray let us know what each director gets. I will not tax "A Shareholder" with too many questions at once; if he will answer these to my satisfaction, I promise him a few more.—ARGUS: *Feb.* 13.

THE WEST POLGOOTH COMPANY—THE COST-BOOK SYSTEM.

TO "A SHAREHOLDER."

SIR,—I have read the various letters from yourself and "Argus" upon the new Cost-book System, introduced by the projectors of the West Polgooth Company; and I can come to no other conclusion than that you seek to establish a deceptive and fallacious system, and that "Argus" manfully opposes you with plain sense and indisputable argument. In your last letter you betray the weakness of your cause by abusing "Argus." You presume that he is a mine agent, to whom the introduction of the new system is the more obnoxious, because it will deprive him of commissions. Beware, Sir, of imputing such motives to an honourable opponent. You may revel in the fancied pain your insult is intended to inflict—you may receive credit for ingenious sarcasm and invective; but it will neither add to your honour, nor further the cause you advocate. "Argus" is a gentleman who has spent years in honourable exertion to make mining speculations worthy of public confidence; has devoted much time to the exposure of abuse and deception. You accuse him of "interested motives" in exposing your system, forgetful that the same feelings actuate you in defending it. I give you credit, Sir, for a brilliant sophistry; would that I could discover the manly and honourable sentiment which a truthful cause ever elicits. Your facts are weak analogies; your arguments, evasion. You state that your system works bravely, in spite of "Argus's" efforts to destroy it. The assertion is evidently an effort to hide your discomfiture beneath the mask of braggadocia. Let me put a few questions to you, and which I will leave to your own conscience and your "legal authority" to answer. Who are the directors?—and what guarantee have we that they will consult the interests of the shareholders, and not their own? Are you one of that body? Who is the solicitor of the company, and has he a seat in the direction? Have not parties, who were induced to take shares, since made application for the return of their deposits, believing the scheme to be fallacious? What sum of money do the directors give for the West Polgooth sett; and what do they charge the shareholders for it? What interest has each director in the adventure in paid-up and free shares? These are fair questions; and, before you again accuse "Argus" of *interested motives* in opposing your scheme, answer them honestly; and the public to which you so frequently appeal, will be better able to judge of the *purity of your own intentions* in advocating such a system.

I am glad that you have taken leave of "Argus." Rest assured, however, that he has not taken leave of you, nor of your visionary projects. Your retirement from the lists is proof that your armour is too weak to sustain a further tilt with so powerful an antagonist. Encourage your scheme, and a premium is given to deception. Check it, and the respectability of mining will remain uncontaminated. You, Sir, may hug the illusion in the fond belief of its substantiality; but the garment of Nessus was not more deadly than the system you cherish will prove to your own hopes, and those of your fellow-projectors.—PHILO-ARGUS: *Feb.* 12.

THE WEST POLGOOTH MINING COMPANY.

SIR,—In reading your Journal occasionally, my eye has been caught by an advertisement called "West Poolgooth Tin Mining Company;" and as I am not a man strong in figures, will your kind subscriber inform me how he intends, for 70 fms. deep, and ¾ mile in length, to occupy 800 men 20 years to work out? As I happened to go underground before West Polgooth ceased working, and saw the lode, which was not hard by any means, it strikes me that a man would drive, or stope, on an average at the least 9 ft. per month, which would be, for 800 underground men, 1200 fathoms per month, 14,400 fms. for the year, and consequently 288,000 fms. for 20 years. Now, take ¾ mile in length, would be 660 fms., and 70 fms. deep would be 46,200 fms., being scarcely 3½ years' work for the 800 men.

In the reading of 800 men for 20 successive years, it induced me to inquire if the *richest* mine in Cornwall ever employed the same number of men underground for that period; and the answer has been, no! How, then, can it be expected that a mine, abandoned, like West Polgooth—not for riches, I presume—is likely to be worked in such a form? I admit Hewas Mine produced a large quantity of tin; but, at the same time, it incurred a loss exceeding 100,000*l.*; since which it has been resumed, and water only drained to the 40 fm. level, which was accompanied by a loss of 10,000*l.*

Mining may do very well, but if statements that have no parallel be put before the public, and of course allowed to pass without notice being made of them, some who have never been underground may think it quite right; but, before embarking in West Polgooth, if they ask the late purser the loss made in working the mine 34 fms. deep, the answer will probably be 10,000*l.*, with their judicious mode of working in shallow ground. I am not going to say anything about liability; but I do think if the mine was worked for 20 years, by 800 men, the cost would be 1,000,000*l.* and the returns far short of covering it. Novel as it may be to see such statements, as a working man, I do not consider it a good "model."

St. Blazey, Feb. 13. LOOKER-ON.

CAMBORNE CONSOLS MINES.

SIR,—Having noticed, in the *West Briton* of Friday last, that shares in these mines were quoted at 45s.; and, wishing to increase my interest at that rate, I immediately applied to the editor for the name of the party who furnished the quotation, and stating my object to be to ascertain where they could be purchased, having failed in my application for that purpose to the mine brokers in the neighbourhood. I was somewhat surprised at the receipt of the following note:—

"I beg to acknowledge the receipt of your favour of yesterday's date, wishing to be informed from whom we received our quotations of the Camborne Consols shares. I must decline, however, doing this without the consent of the party furnishing us; but I have written to him by this post, to know if I may do so."

I have heard nothing since from the editor of the *West Briton*, and would fain, therefore, if it be possible, learn who was the seller on the occasion referred to in that paper, because I am ready to purchase any number of shares at that price, and to pay the broker who may procure them a handsome commission. It is probable that a very unworthy motive may have influenced some one to part with a share—even two or three—at such a price; but will the party give me the opportunity of buying others? He should, I think, for his own credit, as his name may become known. In the meantime, it is my duty, as it is my desire, to guard the respectable shareholder against becoming the dupe of designing individuals.—F. DANIELL: *Feb.* 13.

QUOTATION OF MINING SHARES.

SIR,—I respectfully submit to your notice the variances of the following quotations, as affecting the value price of one of the best tin mines (Wheal Margaret) in Cornwall, paying now, and for some years, 12*l.* and 15*l.* dividends. This mine has been quoted for several months back, during depressive periods, at 225*l.*, 230*l.*, and 240*l.*, up to the 2d. February; and now that the mine (from the purser's last report) never looked better, and tin advanced considerably in price, the shares are quoted, in the Journal of 9th inst., at 210*l.*—a price at which no holder would sell under present circumstances (having myself refused 240*l.*, and valuing far higher). I conceive some error, or interested views, exist in returning depressive quotations.

Great Consols Mine, on February 2d, was 300*l.* quoted, and, although much improved and paid dividend, is stated in the Journal, 9th inst., at 250*l.*

North British Australasian shares, now under most favourable auspices, are reduced from 15s. to 10s.—I have refused 1*l.* 10s. a share.

Lelant Consols were 50*l.*, and are now 26*l.*

None of those shares are, consequently, correctly quoted. A.

London, Feb. 12.

[The alterations referred to have been forwarded us by respectable brokers, whose names can be obtained on application at our office. Our correspondent should endeavour to procure us, from the agents, an occasional report of either Wheal Margaret, Lelant, or Great Consols—the publication of which would go far towards checking erroneous quotations, by placing the mining world in possession of correct information respecting the mines.—We since find that, from the source whence we received the quotations alluded to, we have reason to believe them correct at that time. This we can assure our correspondent, that North British Australasian shares can be obtained at our quoted price, notwithstanding his refusal of 30s. per share.]

BIRCH TOR AND VITIFER MINES.—We are requested to give insertion to the following letter, addressed to the shareholders:—"To allay any unpleasant sensation in your minds, in reference to a paragraph which appeared in the *Mining Journal* of the 2d inst., headed 'Old Vitifer Mine,' and which insinuated that Capt. Dunstan had been engaged in a drunken fray at the New House Inn, and encouraged the men to fight; I have to inform you that, as far as I have yet been able to learn, the imputation that he took any part in the quarrel is untrue. The Inn is not only a public house, *but the only market for butchers' meat in the locality* (the centre of Dartmoor). This accounts for the presence of Capt. Dunstan there, he having been a teetotaller for many years. I have only to say that those gentlemen acquainted with, and concerned in the management of, the Birch Tor and Vitifer Mines, have no reason to complain of his management or ability. Capt. Dunstan desires that the mine should be inspected, and Capt. S. Seccombe will report on it shortly, and a copy will be sent to each shareholder. It may be well to add that Capt. Dunstan has had reason to complain of previous attacks on his character, from parties who have been ashamed or afraid to avow their names. The whole matter is submitted to the strictest scrutiny; therefore, you will oblige by suspending your judgment for the present.—J. ELLIOT SQUARE, Sec.: *Plymouth, Feb.* 13."

Mr. E. A. D. Boucher, Rue de Vinaigriers, Paris, metal merchant, has obtained a patent for certain improvements in the manufacture of cards. To prevent the injurious effects on fibrous materials arising from the oxydation of the iron wire of which the cards for carding them are manufactured, it is proposed to coat the wire with a less oxydisable metal than iron by one or other of the following processes:—1. 5 gallons of water are heated to 86° Fahr., and 1 oz. of sulphate of copper, and ½ oz. of sulphuric acid are added to it. When cold, the iron wire is then immersed in it, and thereby coated with red copper; and in order to produce a better cohesion of the two, the copper wire is drawn through a drawing bench. The immersing and drawing is repeated until the wire is sufficiently coated.—2. Or the wire may be coated through the agency of electrical deposition. For this purpose, it is placed in a bath consisting of 5 gallons of water heated to from 48° to 56° Fahr., 2¼ lbs. of yellow cyanure of potassium and iron, and 4½ lbs. of carbonate of potash, and connected to the negative pole of a voltaic battery. A plate of red copper is also immersed, and connected to the wire on one side, and to the positive pole of the battery on the other. The iron wire may be coated by this process, with any other suitable metal, such as tin, brass, lead, zinc, &c., by substituting a plate thereof for the one of red copper in the bath.—*Claims:* 1. Constructing cards for carding fibrous materials with iron wire, rendered inoxydisable by coating with a metal lessoxydisable than iron.—2. The processes for obtaining said coating, as described.

INAUGURATION OF THE GREAT TUBULAR BRIDGE OVER THE MENAI.—Wednesday last, the second tube was lowered to its permanent seat on the Carnarvonshire side, in the presence of its distinguished founder, Robert Stephenson, M.P. So successfully was every part brought to bear on lowering the tube on the rock tower, that an extension of 3-16ths of an inch took place, denoting great rigidity. The gale of Wednesday, and again on Saturday, when the wind was west and by south, or at right angles with the bridge, did not affect the structure in the least, though a pressure of 17½ lbs. to the square foot was ascertained. The only unfinished operations connected with this bridge are the filling up of the gap on the near side, and the grand junction with the Carnarvonshire tower, for which a period of three weeks will suffice—two other weeks will suffice for lining the rails—from which it will be seen that the line will be in readiness for opening within a period of five weeks from this date. of course, there will be a public demonstration on so interesting an occasion; and we know it to be the intention to get up an ovation for Mr. Stephenson in he manner of a public entertainment.—*North Wales Chronicle.*

GREAT RAILROAD ROPE.—A rope for the Columbia Railroad, west of the Schuylkill river, Pa., has been manufactured for the inclined plane, by Messrs. J. Whetham and Son, Philadelphia. It required 14 tons of hemp for its construction, and it was 6000 feet long, 9 inches round, and weighed, when completed, 25,000 lbs. This rope was made in less than 10 days, and the manufacturers have given a guarantee that the rope should transport 80,000 cars over the plane, which, we understand, is about the average service performed by two previous ropes furnished from their manufactory.—*Scientific American.*

On Saturday, a locomotive on the York, Newcastle, and Berwick Railway, exploded, and killed the fireman: the engineer and guard were seriously injured.

BUCKINGHAMSHIRE RAILWAY.—The works between Bletchley and Banbury are in such a forward state as to allow of the opening of this line in about two months' time.

Another smoke-consuming apparatus is about to be tried at Woolwich, the Lords of the Admiralty having granted permission to Mr. Jukes to fit one of his patent smoke-consuming furnaces on board the *Prometheus* steam-sloop, of 200-horse power, at present in the basin at this port. The vessel has just been fitted with new boilers, which will afford a fair opportunity of testing the merits of the plan when applied to marine engines. It has been represented to their lordships as having worked satisfactorily for land service; and, if successful on board of steamers, will effect a great saving in fuel, as it burns the smallest screening or waste coals with a nearly equal production of steam as from the best.

EXHIBITION OF INDUSTRY OF ALL NATIONS.

A very numerous meeting of the City of London committee, for promoting the "Exhibition of Industry of all Nations" was held in the Long Parlour of the Mansion House, yesterday. The most lively anxiety in favour of the object prevailed. Several gentlemen addressed the meeting, and spoke in the most enthusiastic terms of the object, applauding the generosity of the idea of extending the class of exhibitions to all parts of the world. Many questions were asked as to the nature of the articles to be exhibited, whether they were all to be manufactured, or whether raw products and natural productions, articles of elegance and luxury, or articles only of utility; whether manufacturers or wholesale houses were to be each class, exhibitors, or whether manufacturers alone were to have the privilege; whether the building to be erected would be sufficiently capacious for home and colonial and foreign exhibitors.

Most of these questions were satisfactorily answered by Sir James Duke and Mr. F. M. Forster, and by the honorary secretaries, the Rev. S. R. Cattley and Mr. D. W. Wire; after which two resolutions were adopted, appointing parties to convass, and authorise the sub-committee to apply from time to time to the Royal Commissioners for information as to plans determined upon, so that the public may be fully instructed upon all the points necessary for the guidance of the exhibitors. Some gentlemen connected with the American trade gave every reasonable assurance that the project would be hailed in the United States with great delight, and said that large subscriptions might be expected from that country. A sum of 1000*l.* was announced in the room, including 500*l.* from the East India Company. Amongst the company were Alderman Humphrey, M.P., Alderman Salomons, the Baron Rothschild, M.P., Sir James Duke, Bart., M.P., Alderman Musgrove, Mr. M. Forster, M.P., Mr. W. Tite, and a numerous attendance of some of the leading merchants and other gentlemen connected with the City of London.

New Patents.

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

WILLIAM FURNESS, Lawton-street, Liverpool, builder: Improvements in machinery for cutting, turning, planing, moulding, dovetailing, boring, mortising, tongueing, grooving, and sawing wood; also for sharpening and grinding tools or surfaces; and also in welding steel to cast-iron. The patentee describes an ingenious arrangement and construction of machinery for effecting the different operations enumerated in the title of the patent, but of which no intelligible notion can be conveyed without the help of engravings. The improvement in welding cast-iron to steel, consists in placing the heated steel in a mould, and pouring the melted cast-iron upon it—due precaution being taken for the escape of the surplus molten metal. Or, the steel may be first covered with powdered borax. (The latter part of Mr. Furness's invention has been already patented by Mr. Peribach.)

ARTHUR HOWE HOLDSWORTH, Esq., of the Beacon, Dartmouth: Improvements in the construction of marine steam-boilers and funnels of steam-boats and vessels. The object of this invention is to render steam-vessels less liable to accidents from fire than at present, and also to prevent the injurious effects to the health of firemen, arising from the deterioration of the air which they breathe, by its coming in contact with iron heated by the direct action of fire. With these views—1. The portion of the funnel beneath the upper deck is surrounded with a casing, and water is made to flow into the space thus formed between the two, at bottom from a reservoir, which is filled by the action of the paddles. An outflow pipe is adapted to the top of the space for the escape of the surplus water.—2. The screens to the fire-doors are constructed of iron plates, so as to have a hollow interior, into which water is supplied from the steam-boiler by means of hollow hinges or pipes, and then returns to the boiler through similar channels.

Claims.—1. Arranging smoke-box or fire-doors, or screen-doors to fire-doors, in marine steam-boilers, so that water may circulate therein.—2. The circulation of water in spaces within castings to the funnels to marine steam-boilers.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

Louis Jean Jacques Viscount de Serionne, of Paris, for certain improvements in the manufacture of buttons, and in the apparatus and machinery used therein.

B. Donkin the younger, of Bermondsey, Surrey, civil engineer, and B. W. Farey, of Old Kent-road, in the said county, civil engineer, for improvements in steam-engines, and an improved fluid meter.

R. Holliday, of Huddersfield, for improvements in lamps.

W. Blinkhorne, of Sutton, Lancashire, glass manufacturer, for certain improvements in machinery to be used in the manufacture of glass.

J. Macintosh, of Berners-street, Oxford-street, Middlesex, civil engineer, for improvements in obtaining power, in the floating of bodies, and in conveying fluids.

J. Webster, of Leicester, engineer, for improvements in the production of gas for the purposes of light.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

L. R. Bodmer, Manchester, door spring.

Martin, Baskett, and Martin, Cheltenham, porte-fleur brooch. [blinds.

Cope and Collinson, Birmingham, and Berwick-street, London, bracket for Venetian

J. Lingard, Sheffield, pocket knife.

Scott and Thompson, Upper Ground-street, Blackfriars, ladle for pouring melted metallic and other substances.

W. Kidston, and Co., Bishopsgate-street-without, an instrument for drawing blood.

W. Brooksby Crabb, Motcomb-street, Belgrave-square, accelero clasp.

J. St. Quentin, Norwich, water-closet.

J. J. Wilson, Arundel-place, Haymarket, brush.

Enoch Oldfield Tindall, and Lorenzo Tindall, Scarborough, imperial mangle and wringing machine, with horizontal spring pressure.—*Mechanics' Magazine.*

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 15—Carr's Hartley 15 9—Chester Main 16—East Adairs Main 14—Hasting's Hartley 15 9—Holywell 16 to 16 6—North Percy Hartley 15—New Tanfield 15—Ord's Redheugh 14 6—Ravensworth West Hartley 15 6—Tanfield Moor Butes 14 6—West Hartley 15 9—Wylam 16 6—Wall's-End Burraton Killingworth 17 3—Heaton 17 6—Hilda 16 9—Eden Main 18—Belmont 18—Braddyll 18 6—Hetton 19—Haswell 19 3—Jonassohn's 17—Lambton 18 6—Lumley 17 6—Stewart's 19—Caradoc 18—Cassop 18—Kelloe 18 6—South Kelloe 17 9—South Hartlepool 18—Whitworth 14 9—Maclean's Tees 16 6—South Durham 17 6—Tees 19—Hartley 15 3.—Ships at market, 424; sold 78.

WEDNESDAY.—Bate's West Hartley 15 6—Buddle's West Hartley 15 9—Carr's Hartley 15 9—East Adair's Main 14—Hastings Hartley 15 9—Holywell 16 6—North Percy Hartley 15 6—New Tanfield 15—Ord's Redheugh 14 6—Ravensworth West Hartley 15 6—Tanfield Moor Bute's 14 6—Townley 16—West Adairs 14—West Hartley 15 9—Wylam 17—Wall's-End Burraton Killingworth 17 3—Gosforth 17 6—Harton 17 3—Hilda 16 9—Killingworth 17 6—Percy 16 6—Walker 16 9—Lambton Primrose 18—Bell 17 6—Belmont 18—Hetton 19—Haswell 19 3—Jonassohns 16 9—Lambton 18 6—Lumley 17 6—Russell's Hetton 18 6—Stewart's 19—Caradoc 18—Cassop 18—Fox's Hartlepool 16 6—Kelloe 18 6—Whitworth 14 9—Cowndon Tees 17 3—South Durham 17 6—Tees 19—Derwentwater Hartley 15 6—Sidney's Hartley 16.—Ships at market, 370; sold, 61.

FRIDAY.—Bate's West Hartley 15 6—Buddle's West Hartley 15 6—Carr's Hartley 15 6—Chester Main 16 3—Adair's Main 14—Hasting's Hartley 15 9—Holywell 16 6—North Percy Hartley 15 6—New Tanfield 15—Ord's Redheugh 14 6—Tanfield Moor Bute's 14 6—Townley 16—West Hartley 15 9—Wall's-End Hilda 16 9—Percy 16 6—Braddyll 18 6—Hetton 19—Haswell 19 3—Lambton 18 6—Lumley 17 6—Russell's Hetton 18 6—Cassop 18—Denison 17—Kelloe 18 6—South Hartlepool 18—West Hetton 17 6—Whitworth 14 9—Adelaide Tees 18 3—Cowndon Tees 17 3—Maclean's Tees 16 3—Tees 19—Sidney's Hartley 16.—Ships at market, 397; sold, 60.

Delivery of coals, &c., in the port of London during the month of January:—

Newcastle	322	*ships*	106,292	*tons*
Sunderland	212	"	60,091	"
Stockton, Middlesbrough, &c.	254	"	74,193	"
Blyth	20	"	4,224	"
Scotch	1	"	220	"
Welsh	17	"	4,929	"
Yorkshire, &c.	14	"	1,224	"
Small coal	14	"	3,843	"
	854	"	255,016	"
Culm	1	"	80	"
Cinders	2	"	517	"
Total	857	"	255,613	"
Imported in corresponding month, 1849			342,961	"
Decrease			87,348	"

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"Unquestionably this is a most extraordinary and skilful work, and ought to be extensively circulated; for it is quite evident that there are peculiar habits acquired at public schools and private seminaries, which are totally unknown to and concealed from the conductors of those establishments, and which cannot be too strongly reprobated and condemned. The engravings that accompany the work are clear and explanatory; and being written by a duly-qualified medical practitioner, it will, doubtless, be the means of saving many a youth, as well as those of maturer age, from the various evil consequences resulting from early indiscretions."—*Magnet.*

Sold by Kent and Richards, 52, Paternoster-row; Hannay, 63, Oxford-street; Starie, Tichborne-street, Haymarket: Mann, 39, Cornhill; Gordon, 126, Leadenhall-street, or free by post, for 42 stamps, from the author's residence, who may be consulted personally (or by letter) on these disorders daily, from 10 till 2, and from 5 till 8.

ENGLISHMEN! shortly will be published, an EXPOSITION of the PARSIMONIOUS SYSTEM ADOPTED in the WORKING of COLLIERIES in ENGLAND and WALES—showing the Cause of Explosions and other Casualties in Mines, and consequent wholesale destruction of human life—together with the necessity for Government Inspection of Collieries—Coercive Enactments to Enforce the known Means of Safety—Statistics, &c., in the form of an Appeal to Parliament and to the Public generally. Price 2s. 6d.—By C. COLWELL, Borough-road, Southwark.

N.B.—As the number of copies will be limited—beyond those intended for Members—orders should be given immediately to any bookseller in your neighbourhood.

BANK OF AUSTRALASIA (incorporated by Royal Charter, 1835), No. 8, AUSTINFRIARS.—The Court of Directors GRANT BILLS and LETTERS of CREDIT on the under-mentioned branches—viz.: Sydney, Maitland, Melbourne, Geelong, Hobart Town, Launceston, and Adelaide, on terms which may be learnt on application, either at their offices, 8, Austinfriars, or at their bankers, Messrs. Smith, Payne, and Smiths. By order of the board, WM. MILLIKEN, Sec.

CENTRAL AMERICAN COMMERCIAL AND AGRICULTURAL COMPANY.—A MEETING of the DEBENTURE HOLDERS in the above company will be HELD at the London Tavern on Tuesday, the 19th inst., at Two o'clock precisely, to receive the Report of the Committee appointed at the General Meeting, held on the 12th December last, and for the adoption, or otherwise, of the measures therein proposed.

CALEDONIAN RAILWAY COMPANY.
TO THE SHAREHOLDERS.

In accordance with the resolution adopted by the General Meeting yesterday, we shall this day resign our seats as directors of the Caledonian Railway Company, and elect the gentlemen who have been recommended as our successors.

Though our official connection with you is thus brought to a close, we must beg leave to express the deep interest which we shall ever retain in all that relates to the prosperity of the undertaking, and the anxiety with which we shall look to the measures which may hereafter be adopted for the conduct of its affairs. That these measures may be successful, we sincerely hope; and by no act of ours will any difficulty be thrown in the way of those who are now invested with the responsibility of carrying out the views which have recommended them to your choice.

We have no wish on the present occasion to say one word which might cause irritation in any quarter; and we feel confident that, when the present excitement is past, the great body of shareholders, in judging our actions as directors, will bear in mind the very peculiar character of the times through which we have had to conduct the undertaking,—the rival interests with which the company has had to contend,—and the consequent necessity (with a view to protect, as far as possible, your property) for adopting extraordinary measures, to which, under other circumstances, we might not have had recourse. You will also not fail to remember that we had to guard your interests against that indiscriminate encouragement which was given by Parliament to railway speculation, and which is now admitted on all hands to have been as injurious to the public as it was hasty and ill-advised in regard to railway companies; and, lastly, we trust that you will do us the justice to recollect, that the policy which we have pursued has, until now, been supported by the great body of the shareholders.

The contentions which have for some time back prevailed in the company, have paralized our efforts to such an extent, that we have felt it necessary for your interests that these contentions should be brought to a close. We are also satisfied that, except by means of the combined energies and co-operation of the shareholders, the affairs of the company cannot be advantageously administered by any body of directors. We, therefore, feel anxious that the measures of our successors in office may be such as to entitle them to that general support which will tend to the restoration of public confidence, and to the re-establishment, on a sound basis, of the credit of the company.

That these results may yet be realized we do not doubt; and we beg to assure you that, in our various localities, we shall continue to do our utmost to promote, in every way, the success of the great work in which we have been so long and so deeply interested.

By order of the board, J. J. HOPE JOHNSTONE, Chairman.

London, February 13, 1850.

CALEDONIAN RAILWAY COMPANY.—At an Adjourned Extraordinary General Meeting of the Caledonian Railway Company, held in the Freemasons' Tavern, Great Queen-street, London, on Tuesday, the 12th of Feb., 1850,

J. J. HOPE JOHNSTONE, Esq., of Annandale (Chairman of the Company), in the chair,

It was resolved,—That the directors be now requested to appoint the following gentlemen as their successors in office—viz.:

The Hon. Edward Plunkett, Captain R.N.
James Baird, Esq., Gartsherrie, Glasgow.
Thomas Thornborrow Fawcett, Esq., London.
Thomas M'Micking, Esq., Edinburgh.
Douglas Campbell, Esq., Edinburgh.
Richard Potter, Esq., London.
William Johnston, Esq., Commercial Bank, Glasgow.
John Duncan, Esq., Aberdeen.

J. J. HOPE JOHNSTONE, Chairman.

The chairman having left the chair,—

It was resolved unanimously,—That the thanks of the meeting be given to the chairman for his conduct in the chair. J. W. CODDINGTON, Secretary.

LOANS ON DEBENTURES.—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.

By order,
125, George-street, Edinburgh, Dec. 1, 1849. D. RANKINE, Treasurer.

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COST of an APPARATUS to produce a ventilation of 20,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very fiery; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.

The Ventilator has been at work for upwards of nine months at the Eaglesbush Colliery, near Neath, working under a rarefaction of 2½ to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.

LICENSES will be GRANTED on application to
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BICKFORD'S PATENT SAFETY FUSE.—The Patentees of the ORIGINAL, and only real, SAFETY FUSE, beg to inform Merchants, Mine Agents, Railway Contractors, and all persons concerned in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE *has now a thread wrought into its centre*, which being patent right, infallibly *distinguishes it from all imitations*, and ensures the continuity of the gunpowder The Safety Fuse is now protected by a Second Patent, and manufactured by greatly improved machinery. BICKFORD, MITH, & DAVEY, Camborne, Cornwall.

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THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in MARCH next, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 25, Fleet-street.

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BANKERS—Devon and Cornwall Banking Company, Plymouth and Tavistock.

PROSPECTUS.

BOTTLE HILL TIN AND COPPER MINE is situate in the parish of PLYMPTON ST. MARY, in the county of DEVON, about 7 miles from Plymouth, and 2 miles from the Plympton Station of the South Devon Railway.

The sett is very extensive, being about 1 mile in length on the course of the lodes east and west, of which there are six in number, and about half a mile from north to south. The north part of this sett is composed of granite, of a character congenial for mineral deposits—the old workings being in killas, or clay-slate stratum, with a great cross-course and several small ones, running north and south.

A deep adit has been brought up to drain the mine, at a cost to the late adventurers of £12,000; an engine-shaft sunk 110 fathoms from surface, giving 60 fathoms of backs above the deep adit level. A great portion of this ground could be taken away at a tribute of 10s. to 12s. in the £1, within one month from the recommencement of operations, which would very considerably assist the cost of the mine. In order that the workings should be fairly and regularly prosecuted, it is necessary that a steam engine should be erected, which will prevent any delays at any season—it having been ascertained that in very dry summers and severe winters, operations have been suspended nearly three months in the year, but it is considered that the engine would not be required more than two months, on an average, during the year. The expense of this steam-power having been taken into consideration by the lord, he liberally reduced the dues to 1-20th.

It will be seen from the following reports, that this mine was abandoned by the late adventurers at the very time when good returns of tin were being made, but the water-wheel having broken down, and the machinery generally not being in a fit state to work the mine, and the tin market being at that time very depressed, many of the shareholders declined to expend money in the erection of any new.

Tin and copper ores were sold during the last workings of the mine to an amount exceeding £100,000, which is sufficient to prove the character of the sett.

There is now left in the bottom of the 50 fathom level a large quantity of tin-stuff already broken, with tramroad, waggon, miners' tools, and the bottom of a 14-inch plunger, which, with the counting-house, agent's house, material house, smiths' shop, and burning-house at surface, cannot be taken at a less value than £1000. The mine will be worked strictly on the Cost-book Principle. A deposit of £1 per share will be required to be paid to the Devon and Cornwall Banking Company's banks, as soon as the shares are subscribed for—remainder, if required, by instalments of £1 every two months.—Twenty-four shares are reserved.

Application for shares to be made to Mr. G. Trickett, Post-office Chambers, Plymouth; Mr. John Metherel, sharebroker, Tavistock; Mr. Thos. Dunn, Matthew-street, Tavistock; Mr. John Hamlyn, mining agent, Drake's Walls, Calstock, Cornwall; Mr. John Williams, Roseland Foundry, Liskeard; and Messrs. Watson and Cuell, No. 1, St. Michael's-alley, Cornhill, London—and of whom all further information can be obtained.

Report of Capt. WILLIAMS, *an Agent in the former workings of the Bottle Hill Mine.*

SIR,—According to your request, I beg to send you my report of Bottle Hill Mine, and I hope you will pardon me, if, in doing so, some part of what I say should appear prospective, as it seems to me that I cannot do justice to the concern by merely giving a report of her present state, without adverting, in some measure, to what transpired under my notice in the last workings of the mine; and taking that as a rule, as to the probable results in case of her resumption by another company.

It seems probable to me, that whoever resumes the mine, one of their objects would be to sink deeper; and assuming this, it follows, as a matter of course, that the deepest level at present in the mine is the most important point to report on, which I now proceed to do. The 50 fathom level is driven east from Strode's shaft to some fathoms beyond Fizze's shaft, a distance of about 100 fms.; the greatest part of this driving was found poor, though some good stones of tin were found in places; but under Fizze's shaft the lode was found very good for about 10 fathoms in length, and worth about £35 per fathom, and some tons of tin were taken away from this place, and dug up as deep as possible under the bottom of the level, immediately before the abandonment of the mine altogether. Now, this is a short piece of lode, but it was invariably found in working the mine, from level to level, that the tin ground differed in length very much; in the next level above the 50 (the 34), it was found long, extending from west of Viguss's shaft to as far east as Fizze's shaft, a distance of about 70 fathoms; but in the 28 fathom level it was somewhat shorter, and so it continued throughout the working. This circumstance might appear strange to those unacquainted with the mine and its neighbourhood, but the cause, no doubt, is the great number of inclinations to which the lodes in this mine are subject, by cross-courses, which, in this mine, are more numerous than in any other I have ever seen, and they are not all continuous from one level to another (or they are not to be perceived) as in most other mines, but a number of them seem (to use a mining term) to make between levels, though there are two or three master ones, which continue their course from the surface to the bottom of the mine; and as there is a cross-course in the 50 fathom level, a great distance to the west of the present deposit of tin, and as there were found, when it intersected the lode, some splendid stones of tin, and the level being driven through a promising, though not a rich, lode, from that point to the tin ground before-mentioned, and judging from what I have seen in the levels above, I am strongly of opinion that, by sinking the mine 20 fathoms deeper, a good mine would be found; and if I might be allowed to express a further opinion on this point, I would say, that I believe that if a steam engine were erected, the water drawn out, and the works prosecuted according to the rules of good mining, that from this place alone more than sufficient tin might be raised to pay the cost of the mine.

There is other ground that might be taken away at a profit in other parts of this lode, both on tribute and otherwise.

The next point to which I would draw attention is the south lode (so called), which is the next lode south from the last described. On this lode a quantity of copper and tin has been raised; and while it was productive it was wrought on, which was on the shallow levels, but very little further; and in the levels deeper than 10 fathoms under the adit, it has never been seen.

There are three other lodes, south of the last-named, but on which nothing has been done within the present age; but there are traditions of their having been found productive on the backs by the ancients. There are also two or three lodes to the north of the one first reported on; from one of which, in the best workings, about 40 fathoms under the surface, some good tin-stuff was produced. It is a very promising lode, and in good ground, but the work done on it has been very limited.

In conclusion, I might be permitted to say, that I am of opinion that any company with sufficient capital, combined with good management, would, in due time, find this a good and profitable undertaking; as, in taking a geological view of the mine and its neighbourhood, the observer is at once struck with its very peculiar mining features; and, as a proof of its productive nature, it is only sufficient to know the amount of tin and copper produced—principally from one lode—amounting to more than £100,000 worth, by modern miners, without referring to the ancients, who mined extensively here. The mine is in killas, of a very congenial nature, and within one-quarter of a mile of granite on the east, into which the lodes are running. I am your obedient servant,

RICHARD WILLIAMS,
An agent in the former workings of Bottle Hill Mine.

Plympton, Devon, Dec. 6, 1849.

Report of JAMES EDDY, *now working in the Devon Great Consols.*

SIR,—I worked in Bottle Hill Mine 13 years, and was there up to the stopping of the mine; and up to that time we continued to raise about 5 tons of tin per month. The greatest part of this tin was raised about Fizze's shaft. At that time I worked as a miner at the back of the 50 fathom level on tutwork, and, to the best of my knowledge, we had £3 per fathom for stoping. This is a good tinny lode. The lode in the bottom of the 50 fathom level I consider to be worth £40 per fathom. At the time the mine was stopped neither the captain nor the men knew the value of the lode, until the lode went under the stamps, and we were all surprised when it was returned; but at this time the materials were all drawn from the bottom of the mine. The mine was, therefore, stopped in the face of a good course of tin. There is a quantity of tin-stuff now lying underground, broke by myself and partners, which I think is worth at least £300, besides a tramroad, tram-waggon, bottom of a 14-inch plunger-lift, miners' tools, &c., worth more than £400. I believe Bottle Hill to be one of the best tin and copper mines in the west of England, if put to work and properly managed.

I am, Sir, your obedient servant, JAMES EDDY.

Report of WILLIAM BARRETT, *Miner, Bottle Hill.*

SIR,—I worked as a miner at Bottle Hill Mine 20 years, and was there when the mine was stopped. At the time we knocked off working we were raising good quantities of tin, most of which was taken from Fizze's shaft. I was one of the last pare that worked in the bottom of the 50 fathom level, where there is a good tin lode, worth more than £30 per fathom, but if tin was selling at £50 per ton, I should think the lode would be worth nearly £50 per fathom. The back of the 50 was a good tinny lode, but not as rich as the bottom. There is a large quantity of tin-stuff in the bottom of the mine which was never brought to surface, on account of the machinery breaking down, which was never again put in order, and the mine was stopped with the same. There is also in the bottom of the mine a tram-waggon, tramroad, and the bottom of a large plunger, besides a quantity of miners' tools.

Reports of CHARLES BLANCHARD, *who worked in Bottle Hill Mine for Thirty-five years, and* JOHN FARLEY.

SIR,—We herewith beg to hand you a report of Bottle Hill Mine, having worked in her for many years—in fact, from the commencement of her last working by Mr. Hitchens, until she was stopped by Captain Williams.

There are in Bottle Hill Mine three parallel lodes—namely, a south lode, a middle lode, and a north lode. On the south lode there has been but little done in the deep adit, which is 60 fathoms deep. From this lode there has been a great quantity of both tin and copper returned, of good quality; some of the copper ore has made £17 per ton. There is a very kindly lode in the adit end now.

The middle lode has been worked 50 fathoms under the deep adit. There is a sink in the bottom of this level, about 4 feet deep, and the lode in this place is from 10 to 12 fms. long—worth from £35 to £40 per fathom. There is also standing a piece of lode from 60 to 70 fathoms long, and from 10 to 12 in height, above the 50, and many pitches on this lode might be set out on tribute above the 50 fm. level at the present price of tin.

There is a railroad in the 50 fathom level, upwards of a 100 fathoms in length—a good pile of tin-stuff broken, a tram-waggon, miners' tools, and a great part of a plunger-lift, worth at least £200, which could not be taken away, in consequence of the machinery breaking down and the water coming in.

On the north lode very little has been done. This lode was cut in sinking Strode's engine-shaft, at nearly 40 fathoms deep. There have been some very good stones of tin broke on this lode, and it is worthy of a further trial—but little having been done, little can be said about it.

During the last workings there was nearly £120,000 worth of tin and copper returned in this mine. Should you, or any other person, desire further information, we are willing to afford all we know about it. We are, Sir, yours, &c.,

CHARLES BLANCHARD, JOHN FARLEY, Sen.

Hemerdon, Plympton St. Mary, Devon, Jan. 1, 1850.

SEWERAGE OF LONDON.—The ATTENTION of the COMMISSIONERS appointed to determine upon the MOST EFFICIENT MATERIAL for the CONSTRUCTION of the SEWERS OF LONDON, is particularly directed to the ASPHALTE OF SEYSSEL, which more than any other material is applicable to the CONSTRUCTING and INTERNAL COATING of BRICK CULVERTS and OTHER CHANNELS for DRAINAGE.

The experiments made by the Royal Artillery on the embrasures of Plymouth Citadel, constructed of Seyssel Asphalte Brickwork, under the orders of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalte over all other cementitious compositions. A printed account of these experiments can be had on application to J. FARRELL, Secretary,

Seyssel Asphalte Company—"Claridge's Patent"—Established 1838.

Note.—The application of the Asphalte of Seyssel is specially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in marshy situations, and it has been suggested that it would be peculiarly applicable for covering the *areas* of closed *grave yards*, and for the construction of *catacombs*.

IMPROVED WIRE ROPE.—The UNDERSIGNED, in tendering their best thanks for the liberal support they have hitherto received, respectfully solicit attention to the vast IMPROVEMENTS which new machinery and attention has enabled them to effect in the MANUFACTURE of ANDREW SMITH'S PATENT WIRE ROPE, more particularly his FLAT ROPE, which they can now produce of a description far superior to any previously offered to the public.

WILKINS & WEATHERLY.
Patent Wire Rope Works, 39, High-street, Wapping, London.

JOSEPH DEELEY, of the LONDON and NEWPORT IRON-WORKS, NEWPORT, MONMOUTHSHIRE, respectfully recommends to the notice of the public his PATENT FOUNDRY FURNACE, which has been effectually tested, and is now in constant use at the above works, where it may be seen by all persons interested. This furnace operates without the aid of any motive-power to impel the air. An immense saving is the consequence, both in erecting and working. One-third of the coke usually consumed is more than sufficient; a loss of only 22 lbs. of iron to the ton is sustained in smelting. It is also available for large or small work of every description, and may be tapped out as required.

The IRON MELTED in this furnace also undergoes an extraordinary improvement in quality.

SCOTCH PIG and SCRAP are returned equal to cold-blast in point of strength, and capable of being chipped or filed with the greatest facility.

FOUNDRIES USING this FURNACE may exist in the most densely populated cities, without causing the least nuisance—all smoke, dust, and noise being avoided.

The Continental, Colonial, Scotch, and Irish PATENT RIGHTS are for disposal; the Patentee would also treat for the purchase of Patent-Rights, or Grant Licenses to manufacture for certain counties or districts in England or Wales.

APPLY TO THE PATENTEE AS ABOVE.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

DUNN'S IMPROVED MODE OF REMOVING RAILWAY CARRIAGES FROM ONE LINE TO ANOTHER.

The ADVANTAGES of the PATENT TRAVERSERS over those in ordinary use are, that there is no expensive gear attached, and they are not liable to get out of order; they are easily cleaned and oiled; the foundations are formed upon the simplest sleepers; the cross tram-rails are upon a level with the permanent rails, leaving no break or recess whatever, and the roads are as firm and steady as the general line. The whole of the gear is simple, strong, and inexpensive, compared with others, and leaving considerable more room in a station than turntables, and at a saving of from 200 to 300 per cent. over the same. One of these Trucks is now working 10 lines of rails at the Peterborough Station of the Eastern Counties Railway; another at the Salford Station, Manchester; and one is working 9 lines of rails on the Paris and Lyons Railway. It has also been introduced at many smaller stations throughout the country, for goods warehouses, stone quarries, collieries, contractors, &c.; and the engineer and directors of the Lancashire and Yorkshire Railway Company decided to work the chief stations at Liverpool and Bradford by two Traversers in each, working four lines of road per Traverser, in preference to all other plans submitted.

MANUFACTURED in ENGLAND solely by THOMAS DUNN, Windsor Bridge Iron-works, near Manchester; in SCOTLAND, by Messrs. SHANKS, and CO., Johnstone, near Glasgow; in FRANCE, by VARRALL, MIDDLETON, & ELWELL, *Ingénieurs Mécaniciens*, No. 1, Avenue Trudaine, Paris; and *BUDDICOM* and *CIE., Ateliers de Réparations, Soteville-les-Rouen.*

*** For prices and particulars regarding the various modes of working and turning, apply to Mr. THOMAS DUNN, WINDSOR BRIDGE IRON-WORKS, near Manchester, where various sizes are kept in stock. Also, Improved Screw Jacks, Crabs, and Blocks.—A good selection of Patterns for Cranes, Water Pillars, Engine Tables, Hydraulic Wheel Forcing and Chain Testing Machines, Hydraulic and Screw Presses, &c.

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SCOTTISH AMICABLE MUTUAL LIFE ASSURANCE SOCIETY.—ESTABLISHED 1826.
LONDON OFFICES—No. 43, LOMBARD-STREET.

PRESIDENT.
THE MOST NOBLE THE MARQUIS OF DALHOUSIE.
VICE-PRESIDENTS.
HIS GRACE THE DUKE OF BUCCLEUCH.
JOHN CAMPBELL COLQUHOUN, Esq., OF KILLERMONT.

A Policy of £1000, opened with this Society in 1840, was, in 1846, by the addition of £2 per annum on every £100, increased to £1120. And, by the above principle of this Society, an addition of 2 per cent. per annum, upon the above accumulated sum of £1120, gives, as the value of the original policy of £1000,

In 1849, if it then becomes a claim	£1187	4	0
1850 " "	1209	12	0
1851 " "	1232	0	0
1852 " "	1254	8	0

TABLE—*Illustrating Accumulation of Additions on £1000 Policy on Society's Plan:*—

Amount with Additions.		Sum of Premiums paid according to Ages at entry.								
At end of Years.	At 2 per cent. per ann.	20.			27.			34.			41.		
6	£1120 0 0	£145	5	0	£167	8	4	£196	5	10	£235	19	2
13	1276 16 0	290	10	0	334	16	8	392	11	8	471	18	8
27	1659 6 7	581	0	0	669	13	4	785	3	4	943	16	4
55	2802 10 10	1162	0	0	—			—			—		

New entrants admitted to every advantage.
Immediate, deferred, and survivorship annuities granted.
Every facility afforded to assurers.

THE WHOLE PROFITS DIVIDED AMONG THE ASSURED.
Manager—WILLIAM SPENS.
Resident Secretary in London—J. E. C. KOCH.

SEA, FIRE, LIFE ASSURANCE OFFICE,
CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.
(ESTABLISHED BY ACT OF PARLIAMENT.)
31, *CORNHILL, LONDON.*

Capital £100,000, in shares of 20s. each, to be paid in full on allotment, bearing a guaranteed interest of 5 per cent. in perpetuity (irrespective of further dividends) upon the paid-up capital.

Application for shares to be addressed to the Directors, at the offices of the Society. Marine, fire, and life assurances granted on the most liberal terms.

Immediate and deferred annuities granted on terms especially advantageous for investment of capital. By order, AUG. COLLINGRIDGE, Managing Director.

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Age.	With Profits.	Age.	Without Profits.
20	£1 19 3	20	£1 14 6
30	2 11 3	30	2 5 1
40	3 8 3	40	3 0 2

The whole of the Profits from the Life Department divided amongst the Policy holders. All Life Policies indisputable.—All Life Policies free of stamp duty.

ALFRED BURT, Actuary.

*** WANTED, AGENTS and MEDICAL REFEREES for the PRINCIPAL TOWNS in the KINGDOM.
COUNTY SURVEYORS ALSO REQUIRED.

SEA, FIRE, LIFE ASSURANCE SOCIETY.—Notice is hereby given, that the HALF-YEARLY DIVIDEND on the capital stock of this society, at the rate of 5 per cent. per annum, due on the 31st ult., will become PAYABLE on or after the 30th inst. By order of the court of directors,
31, Cornhill, London, Jan. 9, 1850, AUG. COLLINGRIDGE, Managing Director.

SEA, FIRE, LIFE ASSURANCE SOCIETY.—Notice is hereby given, that the REGISTERED SHARE CERTIFICATE of this society will be DELIVERED on application, on production of the share receipt.
By order of the court of directors,
31, Cornhill, London, Jan. 9, 1850. AUG. COLLINGRIDGE, Managing Director.

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London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their offices, No. 26, FLEET-STREET, where all communications are requested to be addressed. [*February* 16, 1850.